a. Applicant identification
Canyon County
Attn: Brad D. Goodsell
Deputy, Civil Division
Canyon County Prosecuting Attorney's Office
208-454-7391
bgoodsell@canyonco.org
1115 Albany Street
Caldwell, Idaho 83605

b. Funding Requested
    a. Single Site Cleanup
    b. Federal Funds Requested
        i. $500,000.00
    c. Petroleum

c. Location
    a. Parma
    b. Canyon County
    c. Idaho

d. Property Information
Anderson Corner Store, 28040 Hwy 20/26, Parma, Idaho 83660

e. Contacts
    a. Project Director
    Paul Navarro
    Facilities Director
    208-454-7473
    pnavarro@canyonco.org
    1115 Albany St.
    Caldwell, Idaho 83605

    b. Chief Executive/Highest Ranking Elected Official
    Tom Dale
    Canyon County Commissioner
    208-454-7507
    tdale@canyonco.org
    1115 Albany St. Rm 101
    Caldwell, Idaho 83605

f. Population
- 2,228 (2017)

g. Other Factors Checklist
- Community Population is 10,000 or less.

- Project is located an IRS-designated Opportunity Zone (Tract FIP- 16027022100).

STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

1445 North Orchard • Boise, ID 83706 • (208) 373-0550
www.deq.idaho.gov

C. L. "Butch" Otter, Governor
John H. Tippets, Director

January 22, 2019

U.S. EPA Region 10
Attn: Terri Griffith
1200 Sixth Avenue, Suite 900
Seattle, WA 98101

RE: STATE LETTER OF ACKNOWELDGEMENT

Dear Ms. Griffith:
I am writing to support the proposal submitted by Canyon County under the Fiscal Year 2019 U.S Environmental Protection Agency (EPA) Brownfields Cleanup Grant Program. Canyon County is submitting an EPA Cleanup grant proposal for property located at 28040 Highway 20-26 in Parma, Idaho. This property is referred to as Anderson Corner and has operated as a gas station and convenience store since the 1930s.

In 1994 and 2004 petroleum leaks were identified at the facility during routine insurance inspections. The fueling facility was eventually shuttered and the above ground fuel storage tanks were removed from the property. In 2017, Canyon County acquired the property by operation of law due to non-payment of property taxes. Soon after, the County demolished and removed the buildings to facilitate the proposed remediation of the property.

Canyon County has been working closely with the Idaho Department of Environmental Quality (IDEQ) and Alta Science and Engineering, Inc. to further assess the scope of the contamination at the property and assist in removal of petroleum contaminated soil and free product in the groundwater. The Idaho DEQ supports Canyon County submitting the EPA Cleanup grant proposal and will continue working with local and federal partners to make this project a success.

The Idaho Department of Environmental Quality (IDEQ) greatly appreciates the support we have received in the past with the 128(a) State Response program and look forward to continued support from EPA in the State of Idaho.

Sincerely,

Eric Traynor
Brownfields Response Program Manager

ec: Brad D. Goodsell, Deputy, Civil Division, Canyon County Prosecuting Attorney's Office
EDMS #

***1. Project Area Description & Plans for Revitalization, a. Target Area & Brownfields, i. Background & Description of Target Area*:** The city of Parma is located in Canyon County, approximately 43 miles northwest of Boise, Idaho. Parma, population 2228, is known for various agricultural crops. Parma is approximately twenty miles away from Meridian, the fastest growing city in America. The benefits of this growth have not made their way west of Interstate 84 (the main thoroughfare in Idaho). The town of Nyssa, Oregon is located approximately eight miles away from Parma and had an economic downturn when the beet plant shut down. There were many people from Parma who worked at the beet plant. In addition to the loss of jobs a hard winter with record snow caused dozens of onion storage sheds and packing facilities to collapse. The damage cost the area nearly $100 million and approximately 15,000 tons of onions were lost. The region's 300 onion farmers and 30 shippers produce about 25 percent of the nation's big bulb storage onions (Capital Press, 1/15/2017). This area has also suffered losses due to drought. Recently the United States Department of Agriculture (USDA) designated Canyon County as a primary natural disaster area (Idaho Press Tribune, 11/23/18).

Canyon County is nationally recognized as a highly productive agricultural area. Agriculture and farming provide the economic and social foundation of our communities. It is therefore essential for the county to support agriculture especially through the land use planning process and to consider agricultural preservation when remediating contaminated properties. This agricultural component of our Comprehensive Plan has been developed in compliance with House Bill 148, which was enacted during the 2011 session of the Idaho Legislature. House Bill 148 modified section 67-6508 of the Idaho Land Use Planning Act to require that agriculture be included as an independent component of a comprehensive plan.

The Anderson Corner property used to be an agricultural field before the convenience store was built in the 1930s. Since the 1990s there have been documented petroleum leaks on the property that have contaminated the soil and groundwater. EPA grant funds will help defray the cost of remediating and correcting petroleum contamination at the site. After remediation is complete the site will be returned to the tax roll as required by law. There has been interest from adjacent farmers to return the property back to agriculture.

***a.ii. Description of the Priority Brownfield Site*:** Anderson Corner is a 1.417-acre parcel that operated as a rural gas station and convenience store from the 1930s until the mid-2000s. The site was dominantly in agricultural use before the 1930s and is still currently surrounded by crops on the north and west side of property. In 1994 and 2004 petroleum leaks were discovered. The fueling facility was eventually shuttered and the above ground fuel storage tanks and buildings were removed from the property. The buildings contained lead based paint and asbestos containing materials. Site assessments revealed the following environmental concerns at the property; benzene, toluene, ethylbenzene, total xylenes (BTEX), naphthalene and lead in soil and groundwater which poses a threat to human health. Contaminants are present at the site in concentrations that exceed their respective residential use screening levels (RUSLs). In addition, the following exposure pathways are considered in the evaluation: direct contact with soil, ingestion of contaminants, and the protection of groundwater. The overall goal is to reduce or eliminate exposures to physical, environmental, and health hazards at the site so Canyon County can return the property back to the tax rolls. As the site is bounded by agricultural fields and the contamination is migrating off site in the direction of the fields the need to remove the source is imperative to stop the pathway.

b. Revitalization of the Target Area. b.i Redevelopment Strategy and Alignment with Revitalization Plans: As per county ordinance Canyon County's objective is to remediate contamination on the site and return the property to the tax rolls as required by law. Adjacent owners would like to return the land to agriculture in the form of row crops.

b.ii. Outcomes and Benefits of Redevelopment Strategy: The traditional use of this property has been commercial, most recently supporting a gas station and convenience store. Because of the nature of this parcel, heavy traffic and distance from established communities, conversion to agriculture would be the best use of the property.

c. Strategy for Leveraging Resources. c.i. Resources Need for Site Reuse: Canyon County is eligible to receive federal grant funds and has a long history of successfully acquiring extra-budgetary funds and much of the success is due to our association with the Southwest Idaho Resource Conservation and Development Council (RC&D). The RC&D is a 501(c)3 and assists sponsors in implementing projects by providing technical and financial information and coordinating activities through communication, education, and networking. They also work with local governments, conservation districts, nonprofits and other agencies to facilitate projects that improve natural resources, conservation, and human resources. The RC&D is composed of sponsor representatives including but not limited to the Boards of County Commissioners of Ada, Canyon, Elmore, and Owyhee Counties, the Soil Conservation Districts within those Counties, and the Duck Valley American Indian Reservation. In addition, each city or town in any of the counties, any special purpose districts local non-profit organization, and county or multicounty planning bodies are included in the membership. The RC&D has identified ten foundations for potential funding for site reuse. The site is also located in an IRS-designated Opportunity Zone (Tract FIP- 16027022100).

Foundation Name	**Total Annual Giving**
The J.A. and Kathryn Albertson Foundation	$28,220,960
Idaho Community Foundation	$5,311,138
Laura Moore Cunningham Foundation, Inc.	$4,102,985
Micron Technology Foundation, Inc.	$3,461,221
The John F. Nagel Foundation	$1,099,199
Harold E. and Phyllis S. Thomas Foundation	$440,823
CHC Foundation, Inc.	$372,307
Harry W. Morrison Foundation, Inc.	$325,496
Boise Legacy Constructors Foundation, Inc.	$227,802

Foundation Name	Total Annual Giving
Camille Beckman Foundation, Inc.	$221,459
Petroglyph Energy Foundation, Inc.	$208,466

c.ii Use of existing infrastructure: Canyon County removed a majority of the infrastructure to help the Idaho Department of Environmental Quality (IDEQ) conduct a more thorough assessment on the property. If the property returns to agriculture no infrastructure will be needed.

2. Community Need and Community Engagement, a. Community Need, i. The Community's Need for Funding: Canyon County has no funds for this project and cannot raise funds because the county places a high priority on protecting the taxpayer and doing everything within our power to keep the property tax burden as light as possible. The county is committed to fiscal responsibility and strives to levy the appropriate amount of property taxes to provide mandated services in a professional and cost-effective manner. The county has efficiently used fund balance to finance significant capital projects. Appropriate uses of fund balance have played a critical role in the county's financial planning.
Per capita income in Parma and Canyon County lags behind both state and national levels. According to the Idaho Department of Labor, the county's per capita income ranks 42nd out of Idaho's 44 counties at only 74 percent of state per capita income and stands at a meager 60 percent of national per capita income. The city of Parma has no ability to draw on other initial sources of funding to carry out environmental remediation and subsequent redevelopment of the target area because of the small population and low income of the community.

	Target Area-Parma	Canyon County	Statewide	National
Population:	2,228[1]	202,782[1]	1,716,943[1]	316,127,513[1]
Unemployment:	4.4%[3]	2.7%[4]	2.9%[1]	8.3%[1]
Poverty Rate:	21.1%[1]	18.7%[1]	15.2%[1]	15.5%[1]
Percent Minority:	34.8%[2]	24.6%[2]	12%[1]	37.8%[2]
Median Household Income:	$32,898[1]	$44,860[1]	$51,807[1]	$53,889[1]

[1]Data are from the 2012-2016 American Community Survey 5-Year Estimates available on American FactFinder at https://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml
[2]Data are from the 2012-2016 American Community Survey 5-Year Estimates available on American FactFinder at https://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml.
Note, the percent minority is derived from the HISPANIC OR LATINO AND RACE population table (i.e., the sum of the Hispanic or Latino (of any race), Black of African American alone, American Indian and Alaska Native alone, Asian alone, Native Hawaiian and Other Pacific Islander alone, Some other race alone and two or more races percentages).
[3] Data are from the Best Places website available at https://www.bestplaces.net/economy/city/idaho/parma
[4] Data are from Bureau of Labor Statistics at https://www.bls.gov/

As of 2010-2014, the per capita income of Parma is $14,490.00, which is much lower than the state average of $23,087.00 and is much lower than the national average of $28,555.00. Parma median household income is $32,344.00. The median household income growth rate is much lower than the state average rate of 25.98% and is much lower than the national average rate of 27.36%.

The median age in the city was 34.9 years. 30.1% of residents were under the age of 18; 7.8% were between the ages of 18 and 24; 24.1% were from 25 to 44; 24.2% were from 45 to 64; and 13.8% were 65 years of age or older.
According to the 2010 census, there were 2,228 people, 710 households, and 506 families residing in the city of Parma. The racial and ethnic makeup of the city was 75.4% White, 0.4% African American, 1.2% Native American, 0.7% Asian, 20.0% from other races, and 2.4% from two or more races, Hispanics of any race were 31.0% of the population. Canyon County has a large percentage of Hispanics compared to the state.

Residence	Total	White	Non-Hispanic	Hispanic	
IDAHO	1,716,943	1,626,437	1,501,551	215,392	12.55%
S.W. Idaho	283,189	269,621	217,798	65,391	23.09%
Canyon County	216,699	205,975	161,826	54,873	25.32%
Source: Idaho Vital Statistics- Population 2017, Idaho Department of Health and Welfare, Division of Public Health, Bureau of Vital Records and Health Statistics, November 2018.					

a.ii Threats to Sensitive Populations, 1. Health or Welfare of Sensitive Populations: The community most affected by the petroleum contamination of the soil and groundwater at our target area is composed mostly of children and young impoverished families who will consume water from private wells. These sensitive populations generally have reduced access to health care which results in delayed or totally deferred treatment of health issues caused by exposure to these contaminants. Groundwater contaminants potentially threaten this community and individual drinking water supplies which may contaminate houses with toxic vapors, taint the area, reducing residential and commercial property values. Ingestion of the organic chemical contaminants in drinking water will cause damage to kidneys, liver, circulatory, nervous, and reproductive systems.
One of the most serious concerns found on the site are near surface soil impacts. Shallow soil contaminants at the site are at concentrations that exceed EPA site-specific soil screening levels which presents a risk for the public through direct contact, ingestion and inhalation. The site is frequented by the migratory homeless, and wayfarers. These populations are most likely to be immediately impacted by soil contaminants.

a.ii.2 Greater Than Normal Incidence of Disease and Adverse Health Conditions: The three leading causes of death in the United States (heart disease, cancer, and stroke) are all associated with poor diet and being overweight. The public health community has been slow to examine the link between food policy and public health. Until now, most attempts to reverse the American obesity epidemic have focused on changing consumer behaviors, but the results are depressingly inadequate. Little attention has been focused on examining the “upstream determinants;” namely, the food supply.

a.ii.3 Economically Impoverished/ Disproportionately Impacted Populations:
The following table was compiled using EPA’s EJ Screen data:

EJ Indexes	Parma Compared to State Percentage	Demographic Indicators	Parma Compared to State Percentage
Superfund Proximity	80-90%	Demographic Index	80-90%
Traffic Proximity	90-95%	Low Income Population	80-90%
Lead Paint	90-95%	Linguistically Isolated	95-100%
Hazardous Waste Proximity	90-95%	Less Than High School Education	95-100%
Wastewater Discharge	95-100%	Population over age 64	80-90%
PM 2.5	80-90%		
Ozone	80-90%		
NATA Diesel PM	80-90%		
NATA Cancer Risk	80-90%		
NATA Respiratory Hazard Index	80-90%	Source: https://ejscreen.epa.gov/mapper/	

b. Community Engagement, b.i. Community Involvement

The table below identifies groups who will serve as technical advisors to the project.

List of Project Partners		
Partner Name	**Point of contact (name, email & phone)**	**Specific role in the project**
City of Parma	Angie Mejia Clerk/Treasurer, info@cityofparma.net 208-722-5138	Technical Advisor. The City of Parma is the closest municipality to the proposed cleanup site.
RC&D	Debbie Cook, President, swidrcd@idahorcd.org 208-573-4875	Technical Advisor.
Idaho Oregon Snake River Water Trail	Laura Barbour, Coordinator, lbarbour@canyonco.org, 208-454-6884	Technical Advisor. The Idaho-Oregon Snake River Water Trail is a coalition of partners representing federal and local government agencies, nonprofit organizations, private businesses, and citizens with an interest in maintain and expanding a 206 mile recreational, and educational opportunity on the Snake River.
Southwest District Health	Jami Delmore, REHS/Supervisor, Jami.Delmore@phd3.idaho.gov, 208-455-5403	Technical Advisor. Established by the Idaho State Legislature in 1970, Southwest District Health delivers core functions of public health services while monitoring and addressing emerging health threats.

b.ii Incorporating Community Input: Stakeholders will be invited to an agendized meeting of the Board of Canyon County Commissioners to review the proposed cleanup plan prior to 30 June, 2019. Stakeholders will receive a written quarterly report of the activities and cleanup progress for the site and will have 10 working days to respond to the update. The Canyon County

cleanup coordinator, Paul Navarro will prepare the quarterly reports and written responses to partner comments within 10 days of receipt of those comments. All reports and responses to comments will be available for public perusal in the Board of Canyon County Commissioners Office at the Canyon County Courthouse. There will be an annual meeting of the partners in conjunction with the Annual Meeting of the RC&D, as required by the Internal Revenue Service; this meeting is scheduled in early December each year. All stakeholder meetings will be officially agendized, advertised and open to the public. This will be explained in the Citizen Participation Plan (CPP) and response to comments will be shared on Canyon County's website.

3. Task Descriptions, Cost Estimates, and Measuring Progress, a. Proposed Cleanup Plan: The Idaho Department of Environmental Quality (IDEQ) will oversee cleanup activities. Seven alternatives were evaluated in the Analysis of Brownfield Cleanup Alternatives (ABCA). The recommended alternative is a phased approach that first implements soil and free product removal. Based upon the success of the initial phase, implementing an in-situ injection or using a sparging system appears the likely preferred alternative for addressing groundwater impacts. Canyon County is entering into a Voluntary Cleanup Program (VCP) agreement with IDEQ. IDEQ State Response Program will use their consultants, procured using EPA guidelines, to develop a Voluntary Remediation Work Plan (VRWP). The VRWP will be reviewed by the VCP Program Coordinator and made available for public comment. All site workers will be OSHA HAZWOPER certified.

Open excavations will be barricaded during times when no workers are on site. The remediated area will be enclosed by a chain link fence. As excavation activities proceed, soil samples will be periodically screened for volatile organic compounds (VOCs). If free product is encountered, soils will be segregated to drain off the free product. The previously identified petroleum-contaminated soils will be excavated, removed, and land-farmed. The resulting pit will be backfilled and compacted with clean soil. Approximately 700 cubic yards of soil will be excavated and transported to the county-owned Pickles Butte disposal facility. The excavation area will be seeded and covered with straw to mitigate erosion. Free product has been observed in the past in an existing monitoring well. Any free product observed will be removed using a product-selective absorbent sock housed inside a stainless steel canister. Full product removal may involve several absorption events. Free product collected from visqueen and absorbed by socks will be disposed of by Master Environmental. Three groundwater monitoring wells will be constructed at the site in the excavation area. These wells will be gauged for the presence of free phase product. Quarterly monitoring will continue for about three years after remediation objectives have been achieved to ensure that concentration levels are stable and remain below target levels.

b. Description of Tasks and Activities: IDEQ has been working with Alta Science & Engineering, Inc. (Alta) on previous site actions and Canyon County will retain Alta as their Qualified Environmental Professional (QEP). Canyon County will enroll in the VCP. IDEQ Brownfields Program will approve the Quality Assurance Project Plan (QAPP) for the next phase of assessment which will include a combination of excavation and removal of petroleum contaminated soils (PCS) and free product removal from source area and contaminated well (first year); installing wells for In-Situ Sorption & Biodegradation injection (first year, second year if needed) and quarterly monitoring for the life of the project which will run for three years. Canyon County will cover any monitoring costs after the three years.

Task 1. Voluntary Cleanup Program /Voluntary Remediation Work Plan/ Quality Assurance Project Plan/ Site Safety and Health Plan Timeframe- Spring/Summer 2019.This task will include enrolling in the VCP where IDEQ's Brownfields program will develop a Voluntary Remediation Work Plan (VRWP) for Canyon County. Implementation will occur once this draft plan has gone through VCP review and all public comments are addressed. A Quality Assurance Project Plan (QAPP) and Site Safety and Health Plan (SSHP) will be developed through the Brownfields program for site remedial work. Cost share will be used for Paul Navarro's (Canyon County Project Manager) oversight and review of documents.
Task 2. Community Engagement: Timeframe- Summer 2019.This task includes preparing a Citizen Participation Plan (CPP) to inform the public of site activities. Once the CPP is finalized there will be door to door visits to neighboring properties to inform of planned cleanup actions. Additional activities also include notices, presentations, and feedback from the public on reuse planning. Materials will be provided to the Patricia Romanko Public Library in Parma and Canyon County staff will maintain the information repository. Cost share will be used for Paul Navarro's time and travel to Parma.
Task 3. Site Remedial Work: Timeframe- Summer/Fall 2019. The first phase of remedial action will include a combination of excavation and removal of petroleum contaminated soils and free product removal. Contractor will mobilize on the site and implement best management practices (BMPs) to reduce soil erosion. Safety fencing will be erected around perimeter of the site. Free product will be absorbed using a product-selective absorbent sock housed inside a stainless steel container. Full product removal may involve several absorption events. One-time removal of the contamination source (700cy), transportation to an offsite landfill. Tipping fees will be waived for soils disposed of at the County-owned Pickles Butte Landfill. Backfill and compact the pit with clean soils from an offsite source. Cost share will be used for Paul Navarro's time, project oversight, and travel to and from site.
Task 4. In-situ Sorption & Biodegradation Injection: Timeframe- Summer/Fall 2019, 2020, 2021. Several injection sites will be developed to provide an adequate radius of influence. Single application of a liquid carbon matrix will be injected into the petroleum-contaminated aquifer through gravity-feed or low-pressure well (dedicated injection well). Cost share will be used for Paul Navarro's time, project oversight, and travel to and from site.
Task 5. Post Remediation Monitoring, Reporting and IC/EC: Timeframe-Quarterly 2020, 2021, 2022.This task includes IDEQ staff and consultant services to provide oversight and reporting on quarterly groundwater monitoring for 3 years ($60,000.00). After the cleanup is completed, Canyon County will submit a Voluntary Remediation Work Plan Completion Report to IDEQ, and IDEQ will issue a Certificate of Completion upon approval. Canyon County will then request a Covenant Not to Sue from IDEQ. These documents will be recorded with the deed to the property. Cost share will be used for Paul Navarro's oversight and review of documents. Canyon County will also cover any monitoring costs after the three years.

c. Cost Estimates and Outputs:
Task 1 OUTPUTS - Voluntary Cleanup Program /Voluntary Remediation Work Plan/ Quality Assurance Project Plan/ Site Safety and Health Plan (Total Budget: $10,394.00 Requested EPA funds $8,662.00, Cost Share $1,732.00) VCP enrollment ($2,750.00), VRWP ($3,714.00), QAPP, SSHP ($4,186.00).

Task 2 OUTPUTS - Final CPP; Log documenting feedback, presentation summaries, information repository (Total Budget: $4,297.00, Requested EPA funds $3,581.00 Cost Share $716.00).
Task 3 OUTPUTS -Removal and disposal of free product and approximately 700cy of petroleum contaminated soil (Free product removal, Excavation, transportation, and backfill costs, are estimated at $137,000.00.) (Total Budget: $133,521.00, Requested EPA funds $111,268.00 Cost Share $22,253.00).
Task 4 OUTPUTS - Treatment of impacted groundwater (Total Budget: $384,703.00, Requested EPA funds $320,586.00 Cost Share $64,117.00).
Task 5 OUTPUTS - Final monitoring report ($2,250.00), Certificate of Completion, Covenant Not to Sue, IC/EC. Well decommissioning ($6,000.00) (Total Budget: $65,708.00 Requested EPA funds $54,757.00 Cost Share $10,951.00).

Budget Categories		Project Tasks ($)					
		Remedial Work Plan/HASP/ABCA /Site Preparation	Community Engagement	Site Remedial Work (Free product removal, Excavation, transportation, and backfill costs)	In-situ Sorption & Biodegradation Injection	Post Remediation Monitoring, Reporting and IC/EC	Total
Direct Costs	Personnel		$1,782.00	$3,969.00		$52,150.00	$57,901.00
	Fringe Benefits		$729.00	$1,701.00			$2,430.00
	Travel	$150.00	$600.00				$750.00
	Equipment						$0.00
	Supplies		$300.00				$300.00
	Contractual	$8,100.00		$100,300.00	$305,320.00		$413,720.00
	Other						$0.00
Total Direct Costs[3]		$8,250.00	$3,411.00	$105,970.00	$305,320.00	$52,150.00	$475,101.00
Indirect Costs[3]		$412.00	$170.00	$5,298.00	$15,266.00	$2,607.00	$23,753.00
Total Federal Funding		$8,662.00	$3,581.00	$111,268.00	$320,586.00	$54,757.00	$498,854.00
Cost Share		$1,732.00	$716.00	$22,253.00	$64,117.00	$10,951.00	$99,769.00
Total Budget (Total Direct Costs + Indirect Costs + Cost Share)		$10,394.00	$4,297.00	$133,521.00	$384,703.00	$65,708.00	$598,623.00

1 Travel to brownfields-related training conferences is an acceptable use of these grant funds.
2 EPA defines equipment as items that cost $5,000 or more with a useful life of more than one year. Items costing less than $5,000 are considered supplies. Generally, equipment is not required for Brownfield Grants.
3 Administrative costs (direct and/or indirect) cannot exceed 5% of the total EPA-requested funds.
4 Applicants must include the cost share in the budget even if applying for a cost share waiver (see Section III.B.13. for a list of applicants that may request a cost share waiver). If the applicant is successful and the cost share waiver is approved, it will be removed in pre-award negotiation.

d. Measuring Environmental Results: **Task 1**- Paul Navarro (Canyon County Project Manager) will enroll in the VCP. Alta (IDEQ Consultant) will develop a Quality Assurance Project Plan (QAPP) and Site Safety and Health Plan (SSHP). IDEQ and Canyon County will provide review and comment on the plans. These plans typically take about a month until finalized. Alta will also develop a Voluntary Remediation Work Plan (VRWP) for Canyon County.
The QAPP/SSHP will be available through a public records request in IDEQ's database. The VRWP will be available at the designated information repository (Patricia Romanko Public Library) in Parma and on Canyon County's website. **Task 2**- Paul Navarro will prepare a Citizen Participation Plan (CIP) and conduct door to door visits in the late spring/early summer to inform the public of cleanup actions. Visits will be recorded in a log book. Presentations will be set up

as certain milestones are reached and will be available on Canyon County's website. All informational materials will also be placed in an information repository (Patricia Romanko Public Library) in Parma, Idaho. **Task 3**- Task orders and invoices will be provided by Alta (IDEQ Consultant) for the first phase of work- removal and disposal of free product and approximately 700cy of petroleum contaminated soil (PCS). Waste Manifests will also be provided to track where the PCS is going. Free product removal will also be reported in a report and tracked through Master Environmental, Inc. May require several absorption events. This will be tracked through task orders. **Task 4**- Task orders and invoices will be provided by Alta (IDEQ Consultant) for the In-situ Sorption & Biodegradation Injection phase of work. This phase will require a new task order for the injection sites and may also require multiple applications as the results are measured by ground water sampling. **Task 5**- Alta (IDEQ Consultant) will develop a task order and invoices through the life of the project and submit a Post Remediation Monitoring report to IDEQ and Canyon County which will document tasks 1,3,4 and 5. Once the site is cleanup up Canyon County will submit a Voluntary Remediation Work Plan Completion report to IDEQ and request a Covenant Not to Sue from IDEQ. These documents will be recorded with the deed to the property. There may also be a need for an Environmental Covenant that would also be attached to the deed. IDEQ project manager Tina Elayer will input information into ACRES as the property is already in the State Response Program.

4. Programmatic Capability and Past Performance, a. Programmatic Capability, i. Organizational Structure: Paul Navarro and his staff in the Maintenance Department will be responsible fulfilling the administrative requirements of the grant. Paul is the Director of building maintenance, and is also the county's ADA compliance officer, oversees all construction projects for the county, including public works, alterations, repairs and improvements to county property. Besides once being a licensed master electrician, Paul also held a contractor's license, a public works license, and oversees contract compliance with all vendors, suppliers, contractors and subcontractors that perform work for Canyon County. Canyon County has a successful record of attaining federal assistance awards, complying with award terms, conditions and requirements and accomplishing productive and beneficial outcomes with federal awards.

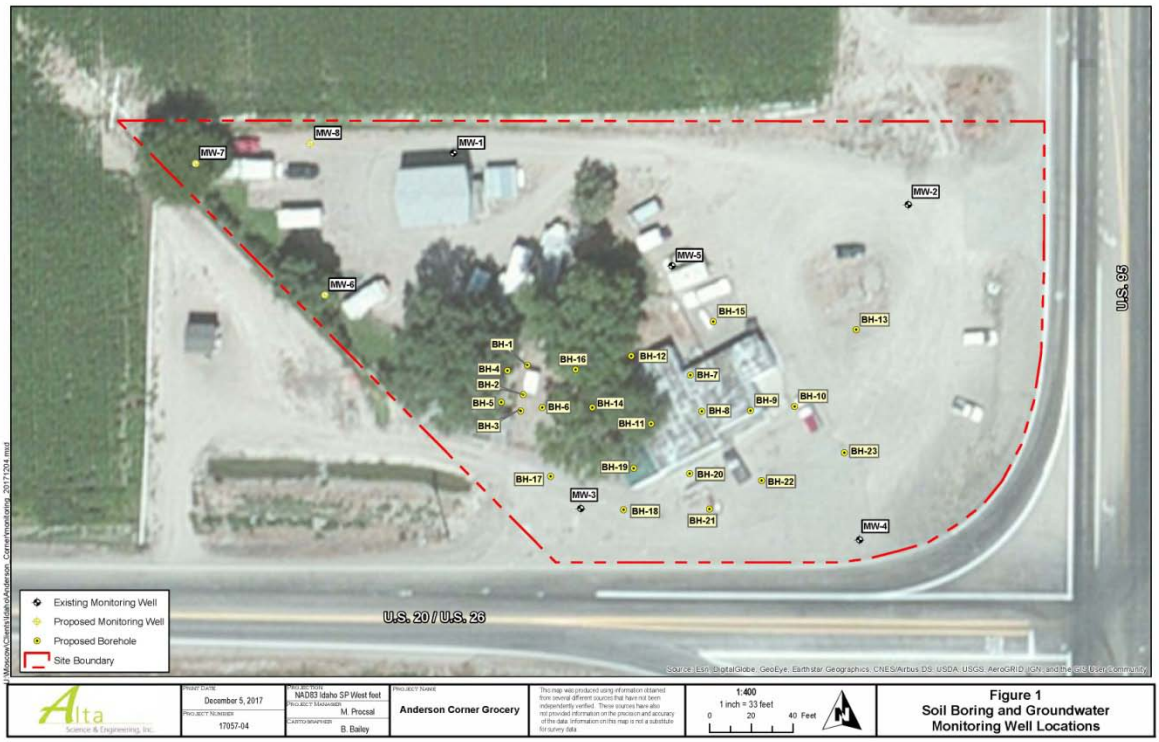
Paul Navarro (Canyon County Project Manager) will be the main point of contact for the project. When the Canyon County commissioners receive the award the Canyon County clerk and comptroller will administer the funds. The grant fund activity will be audited annually by an independent agency. Paul will be responsible for the timely and successful expenditure of funds. A majority of the funds will be provided to IDEQ so they can retain their consultants and contractors to begin work on the project. IDEQ will be responsible for all of the technical work. Tina Elayer will be the Project Manager for IDEQ. Tina has been the IDEQ Boise Regional Office Brownfields Program Specialist since 2013. Eric Traynor will provide oversight as the IDEQ Program Manager. Eric has been the IDEQ State Office State Response Program Manager since 2013. Before 2013 Eric was the IDEQ Boise Regional Office Brownfields Program Specialist. IDEQ has had a successful State Response Program since 2002.Derek Young is the IDEQ VCP Coordinator and Quality Assurance Officer (QAO) for the project. Derek is a certified Professional Geologist. IDEQ's Consultants (Alta) are certified Professional Geologists and Engineers. Alta's contractor Master Environmental has a successful track record of waste disposal projects with IDEQ.

ii. Acquiring Additional Resources: Canyon County is currently enrolled in the IDEQ State Response Program (128(a)). IDEQ will use their expertise and resources to hire contractors through their Finance Department. The cleanup of Anderson Corner is also a project of the Southwest Idaho Resource Conservation and Development Council (RC&D). The RC&D is committed to assisting Canyon County with identifying potential grant sources for our cleanup project, providing expert technical consultation, assistance with preparing applications and administration of grant awards. Canyon County will comply with EPA procurement requirements.

b. Past Performance and Accomplishments, ii. Has Not Received an EPA Brownfields Grant but has Received Other Federal or Non-Federal Assistance Agreements, b.ii.1 Purpose and Accomplishments: Canyon County has extensive history with receiving federal awards granted by the Federal Emergency Management Agency U.S. Department of Homeland Security. The county has been the recipient of multiple Emergency Management Performance Grants and State Homeland Security Programs. In September 2018 the county was awarded $269,456 for the 2018 State Homeland Security Program and $255,368 for the 2018 Emergency Management Performance Grant. The county's continued receipt of these federal awards demonstrates a record of successful application and compliance with federal award standards.

b.ii.2 Compliance with Grant Requirements: Compliance with grant requirements is a focused area of attention to ensure federal awards are properly used for legitimate and useful purposes. Conformity with award conditions including timely and accurate reporting is a priority of multiple county personnel including those responsible for award management, financial oversight, legal compliance and governance. On an annual basis the county participates in a rigorous financial audit conducted by an outside team of certified public accountants. Within the audit process is a review of federal awards including adherence to generally accepted accounting principles, verification of successful completion of award reporting requirements and proper application and expenditure of federal awards. The county has successfully completed outside financial outside audits and consistently receives an unmodified opinion regarding our financial statements and accounting procedures.

Alta Science & Engineering, Inc.



Analysis of Brownfields Clean-up Alternatives (ABCA) for the Former Anderson Corner Grocery Site at 28040 Highway 20-26, near Parma, Idaho

Final

Prepared for: Idaho Department of Environmental Quality, Waste and Remediation Division
November 21, 2018

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Acronyms and Abbreviations

ABCA	Analysis of Brownfields Clean-up Alternatives
Alta	Alta Science and Engineering, Inc.
AST	aboveground storage tank
bgs	below ground surface
BMP	Best Management Practice
BTEX	benzene, toluene, ethylbenzene, and total xylenes
CFR	Code of Federal Regulations
COC	contaminant of concern
GWP	Ground Water Protection
IDAPA	Idaho Administrative Procedures Act
IDEQ	Idaho Department of Environmental Quality
ISCO	In-situ Chemical Oxidation
MCL	Maximum Contaminant Level
MNA	monitored natural attenuation
O&M	Operation and Maintenance
PAH	polycyclic aromatic hydrocarbon
PSTF	Petroleum Storage Tank Fund
PVC	polyvinyl chloride
QAPP	Quality Assurance Project Plan
RSL	Regional Screening Level
RUSL	Residential Use Screening Level
SPH	Separate Phase Hydrocarbon
SVE	Soil Vapor Extraction
SVOC	semi-volatile organic compound
TerraGraphics	TerraGraphics Environmental Engineering, Inc.
UECA	Idaho's Uniform Environmental Covenants Act
USEPA	U.S. Environmental Protection Agency
VOC	volatile organic compound

Units

mg/kg	milligram per kilogram
mg/L	milligram per liter

Section 1 Introduction

The Idaho Department of Environmental Quality (IDEQ) engaged Alta Science & Engineering, Inc. (Alta) to develop an Analysis of Brownfields Clean-up Alternatives (ABCA) for the property known as the Former Anderson Corner Grocery site located at 28040 Highway 20-26, near Parma, Idaho (hereinafter referred to as the "site").

In accordance with Idaho Administrative Procedures Act (IDAPA) Idaho Land Remediation Rules (IDAPA 58.01.18), this ABCA has identified remediation standards to ensure that substantial present or probable future risk to human health or the environment is eliminated or reduced to protective levels based upon present and reasonably anticipated future uses of the site (IDAPA 58.01.18[02]b).

This ABCA describes the evaluation methods used to determine the preferred remedial option to address contamination associated with the site. The remedial alternatives evaluate protection of human health and the environment, ease of implementation, cost of remediation, sustainability, ability to meet proposed land use, and compliance with applicable standards. This ABCA will be open for a 30-day public comment period during which the community can review the proposed clean-up alternatives and provide feedback. Comments will be addressed prior to the finalization of this ABCA.

1.1 Purpose

The purpose of this ABCA is to briefly summarize "information about the site and contamination issues, clean-up standards, applicable laws, clean-up alternatives considered, and the proposed clean-up" (USEPA 2018a). It also provides a detailed description of the tasks involved in implementing the preferred clean-up alternative.

1.2 Scope

The scope of this ABCA includes the identification, evaluation, and selection of clean-up and management options from petroleum-impacted soils and groundwater at the site. Specific tasks include:

- Review previous reports and investigations,
- Establish clean-up goals and objectives,
- Develop clean-up alternatives in accordance with the site clean-up goals,
- Describe criteria used to compare clean-up alternatives, and
- Recommend a preferred alternative based on future land use.

1.3 Report Structure

Section 1 Introduction provides an overview and brief description of the purpose and scope of the ABCA.

Section 2 Background, Site History, and Previous Assessments includes a brief site history and a summary of prior environmental investigations at the site. Additionally, this section provides conclusions for the site and impacted soil and groundwater.

Section 3 Development of Clean-up Goals and Objectives includes a discussion of the current and future land use, contaminants of concern (COCs), and clean-up objectives and goals identified for the site.

Section 4 Identification of Clean-up Alternatives identifies and describes proposed clean-up alternatives.

Section 5 Detailed Analysis of Clean-up Alternatives describes the criteria used to evaluate the proposed clean-up alternatives.

Section 6 Comparative Analysis of Clean-up Alternatives compares the analysis of the proposed alternatives against the evaluation criteria and ranks them based on scores of “1” (low success) to “3” (high success), producing a preferred alternative with the best ranking score.

Section 7 References and Resources Used provides references for reports cited and used for resource information in this document.

Section 2 Background, Site History, and Previous Assessments

2.1 Background

The site address is 28040 Highway 20-26, Canyon County, approximately 5.5 miles north of the City of Parma, Idaho. The site is spatially located, approximately at latitude 43°52'23.75" North and longitude 116°57'20.28" West on parcel R3931200000 at an elevation of roughly 2,275 feet above sea level (elevation estimated from Google Earth at the specific latitude and longitude).

The site is accessible from Highway 20-26, which traverses east-west on the south side of the property, and Interstate 95, which borders the property to the east. The site area is 1.417 acres, and all structural remnants have been removed. Figure 1 shows the site location and layout.

2.2 Site History

The site operated as a gas station and convenience store from the 1930s until the mid-2000s. Above ground storage tanks (ASTs) were installed in late 1960s. A product dispenser island was located south of the main building. Six steel ASTs (one 8,000-gallon unleaded AST, one 6,000-gallon unleaded AST, two 4,000-gallon diesel fuel ASTs, one 4,000-gallon unleaded AST, and one 3,000-gallon diesel fuel AST) were located in a fenced storage area approximately 50 feet west of the main building. Fuel dispensers included a bulk filling station located adjacent to the AST basin and dispensers located south of the main site building. Underground product delivery piping was routed from the southeastern corner of the AST basin east/southward to the product dispensers.

The site was purchased in 1972. In 1994, the former owner applied to the Petroleum Storage Tank Fund (PSTF) for insurance and the PSTF conducted a preliminary Level I site assessment and recommended a Level II investigation for the site. The Level II investigation included a shallow gas investigation consisting of advancing a soil gas probe to a depth of 4 feet below ground surface (bgs) at 16 locations and collecting a gas sample. Relatively high levels of volatile organic compounds (VOCs) were found in the vicinity of the site product dispensers at 4 feet bgs and near the bulk fueling area adjacent to the AST basin at 4 feet and 14 feet bgs. In December 1996, site ownership changed, but the business continued to operate as a fueling station and convenience store.

Another inspection by the PSTF on June 29, 2004, identified a leaking pipe connection, which prompted an environmental investigation by Brown and Caldwell (Brown and Caldwell 2004). Analytical data indicated that subsurface soils and groundwater at the site were impacted by a petroleum release exceeding one or more applicable screening levels. However, data gaps still existed, as the full extent of petroleum-impacted media was not defined.

The ASTs were removed from the site in 2016. The remaining structures were removed in 2017 (however, underground piping infrastructure remained in place). The site is currently owned by Canyon County and is vacant.

2.3 Previous Assessments

A routine Level I inspection by the PSTF at Anderson Corner on June 29, 2004, identified a leaking pipe connection on a western gas dispenser, which prompted a Level II investigation by Brown and Caldwell (Brown and Caldwell 2004). Figure 2 shows historic sample locations.

A summary of assessment activities performed by Brown and Caldwell follows:

- *Initial site Geoprobe® Investigation (June 29 and July 8, 2004)*

  Brown and Caldwell performed a subsurface investigation to characterize potential impacts to subsurface soil from a leaking product dispenser fitting observed during the earlier PSTF site inspection. There was no containment device beneath the dispenser, and fuel was observed to be dripping onto the soil directly beneath the dispenser.

  On July 8, 2004, three exploratory borings (BH-1 through BH-3) were advanced near the unleaded gasoline dispensers using Geoprobe® direct-push sampling equipment. In order to sample soil from directly beneath the dispenser, the boring BH-1 was placed approximately 5 feet from the base of the dispenser and oriented toward the dispenser at an angle of 45 degrees from horizontal. The boring was advanced to a depth of 10 feet bgs. At approximately 8 feet to 10 feet bgs, the probe was vertically beneath the leaking dispenser piping fitting. Borehole BH-1 was backed out and another borehole (BH-1a) was installed at the same point, but with vertical orientation into the ground. Borehole BH-1a was advanced 30 feet bgs. Groundwater was encountered in the borehole at approximately 24 feet bgs. Boreholes BH-2 and BH-3 were advanced at locations approximately 15 feet east/northwest and west/southwest of borehole BH-1, respectively (Brown and Caldwell 2004).

- *Monitoring Well Installation (July 22 and 23, 2004)*

  On July 22, 2004, Brown and Caldwell and their subcontractor, Haz-Tech Drilling of Meridian, Idaho, went to the site to install three groundwater monitoring wells (MW-2, MW-3, and MW-4) at the site. The wells were installed to evaluate potential impacts to groundwater at the site and to assess hydrogeologic conditions. Monitoring wells MW-2, MW-3, and MW-4 were each installed to a depth of 40 feet bgs using hollow-stem auger drilling equipment. Groundwater was encountered in each well at approximately 24 feet bgs. During well borehole installation, soil samples were collected at or near the soil/groundwater interface in each boring using a split-spoon sampler.

  Well construction consisted of 2-inch diameter schedule 40 polyvinyl chloride (PVC) with 0.020 inch factory slotted screened sections that extend from the bottom of each well to 20 feet bgs. The annulus of each well was filled with silica sand up to 2 feet above the screened interval. The remaining annulus was filled with bentonite. The wells are surface sealed with concrete and protected at the surface by 12-inch by 18-inch flush-mount aluminum wells. After installation, the wells were developed using a submersible pump (Brown and Caldwell 2004).

- *Geoprobe Subsurface Soil and Groundwater Investigation (August 5 and 6, 2004)*

  Brown and Caldwell performed an additional subsurface investigation to more accurately characterize the extent of impacts to subsurface soil and groundwater at the site. On August 5, 2004, Brown and Caldwell and their subcontractor, Direct Push Services of West Highland, Utah, went to the site to advance additional exploratory borings at locations determined to be down-gradient of the point of release identified on June 29, 2004.

  On August 5 and 6, 2004, 12 exploratory borings (BH-4 through BH-15) were advanced on the western two-thirds of the site property. All borings were installed to depths of 26 or 27 feet bgs. Continuous soil samples were collected in each borehole. The groundwater sample collected from Borehole BH-14 was observed to have several droplets of free product (Brown and Caldwell 2004).

- *Additional Monitoring Well Installation and Product Line Tightness Testing (August 11 and 12, 2004)*

  On August 11, 2004, Brown and Caldwell and their subcontractor, Hiddleston Drilling of Mountain Home, Idaho, went to the site to install two additional groundwater monitoring wells (MW-1 and MW-5) at the site. The wells were installed to more accurately evaluate potential impacts to groundwater at the site and to better assess hydrogeologic conditions. Monitoring wells MW-1 and MW-5 were each installed to a depth of 40 feet using hollow-stem auger drilling equipment.

  Well construction and development was similar to wells MW-2, MW-3, and MW-4 (Brown and Caldwell 2004).

The analytical data collected by Brown and Caldwell from the 15 borings and 5 monitoring wells indicated subsurface soils and groundwater at the site had been impacted by a leaded gas release from an older, abandoned underground piping run that connected to an abandoned dispenser island formerly located on the west side of the property. The older leaded gas release was never reported or investigated until Brown and Caldwell's assessment activities at the site in 2004.

In 2017, Alta completed a Phase II Environmental Site Assessment (Alta 2017) at the site following the approved Quality Assurance Project Plan (QAPP) (TerraGraphics 2017) to delineate the extent of the following COCs: VOCs, polycyclic aromatic hydrocarbons (PAHs), and total lead in soil and groundwater. VOCs and PAHs were compared to Residential Use Screening Levels (RUSLs) for soil and groundwater.

The purpose of Alta's 2017 investigation was to oversee additional environmental assessment activities, including (1) ground-penetrating radar; (2) deep groundwater well redevelopment, installation, and sampling; (3) separate phase hydrocarbon (SPH) determination and removal; (4) lateral determination of contamination; and (5) soil sampling. Figure 3 shows Alta's 2017 sampling locations.

Based on the available information and site-specific data collected, the October 2017 data indicated there is residual petroleum contamination at the site within soils and groundwater. Alta concluded the following from the October 2017 assessment:

- Shallow soil contamination (less than 15 feet bgs) was greatest near the former dispenser island.
- Based upon the analytical results and field observations, it appeared VOCs remained in onsite soils and groundwater and lead remained in onsite groundwater only. Data showing the locations of the elevated results suggested the most probable primary source is from the former dispenser island in the southern portion of the site near borings BH-20 and BH-21.
- It appeared the lateral extent of petroleum-impacted soils has been fully defined to the north (bound by BH-1, BH-12, and BH-15), to the west (bound by BH-3, BH-18, and BH-19), and to the east (bound by BH-10 and BH-13). The lateral extent of petroleum-impacted soils to the south (e.g., upgradient from the site, beneath Highway 20-26 and potentially off site to the adjacent property) has not been fully defined.
- The lateral extent of petroleum-impacted groundwater has been fully defined to the east (bound by MW-2 and MW-4). However, the lateral extents of petroleum-impacted groundwater to the north off site, and west off site have not been fully defined. Based on the groundwater flow direction and distribution of dissolved phase contaminants, further contamination is likely present to the northwest of monitoring well MW-7 and MW-8.

Section 3 Development of Clean-up Goals and Objectives

3.1 Land Use

3.1.1 Current Land Use

The site is owned by Canyon County and is currently vacant. All former structures have been removed; however, underground piping structures still exist below grade on site. The site previously used an onsite domestic well and septic system. Domestic well (DW-1) remains a functioning water source on site; however, it is not currently in use.

3.1.2 Anticipated Future Land Use

Clean-up target levels vary, depending on whether the proposed land use is residential or nonresidential as defined by IDAPA 58.01.24 *Standards and Procedures for Application of Risk Based Corrective Action at Petroleum Release Sites*. Therefore, evaluating current and reasonably likely future land uses at the site is critical to determining clean-up target levels and potential exposure points, exposure pathways, and exposure factors. The future use of the site is likely to be nonresidential.

3.1.3 Regional Land Use

Parma, Idaho, is located north-northwest of Nampa and Caldwell, Idaho, near the confluence of the Snake and Boise rivers. The community, with a population of about 2,066 (http://www.city-data.com/city/Parma-Idaho.html, accessed February 26, 2018), is located on the Union Pacific main railroad line and on US Highway 95 (http://parmacity.net/, accessed February 26, 2018). Parma is located about 5.5 miles south of the site.

The Oregon border is about 1.5 miles west of the site, across the Snake River. Highway 20-26 borders the site to the south and Interstate 95 to the east. Nunhems USA, Inc. and SPS Dorsing Seeds, Inc. (both seed suppliers) are located west and southwest of the site (west of Interstate 95), respectively. The site is largely surrounded by agricultural fields in a rural setting.

3.1.4 Water Use

The site is currently not connected to city water services. Groundwater can be accessed at the site from an onsite domestic well. Eight other groundwater monitoring wells (MW-1 through MW-8) are currently on site for long-term groundwater monitoring.

3.2 Site Hazards and Contaminants of Concern

Data from the site notes benzene, toluene, ethylbenzene, total xylenes (BTEX) and naphthalene in soil, as well as benzene, ethylbenzene, naphthalene, and lead in groundwater, present at the site in concentrations that exceed their respective RUSL. As such, the above mentioned contaminants are the recognized site COCs.

3.3 Applicable Standards

Clean-up actions at the site must provide for adequate protection of human health and the environment based on the current and potential future uses of the property. Several human and ecological health standards are relevant to the site and should be considered during and after clean-up. These standards include the following:

Soils

- IDEQ RUSLs (IDEQ 2018): These screening levels are the most conservative medium-specific levels and meeting these levels allows unrestricted (residential) use of the property.

Groundwater

- The National Primary Drinking Water Standards set maximum contaminant levels (MCLs) for public drinking water supply systems.
- Idaho Water Quality Standards in the Ground Water Quality Rule (IDAPA 58.01.11) require protection of State waters for appropriate beneficial uses and establish State water quality standards for toxic substances for the protection of aquatic life and human health.
    - Groundwater Quality Protection (established 3-20-97). The policy of the State of Idaho is to maintain and protect the existing high quality of the State's groundwater.
    - Existing and Projected Future Beneficial Uses (established 3-20-97). The policy of the State of Idaho is that existing and projected future beneficial uses of groundwater shall be maintained and protected. Degradation that would impair existing and projected future beneficial uses of groundwater and interconnected surface water shall not be allowed.
    - Prevention of Groundwater Contamination (established 7-1-98). The policy of the State of Idaho is to prevent contamination of groundwater from all regulated and non-regulated sources of contamination to the maximum extent practical.

3.4 Clean-up Goals and Objectives

The overall goal of this ABCA is to reduce or eliminate exposures to physical, environmental, and health hazards at the site for the proposed site use. The current anticipated future use of the site is non-residential and is considered in the evaluation of clean-up objectives. In addition, the following exposure pathways are considered in the evaluation: direct contact with soil, ingestion of soil, and the protection of groundwater.

It appears the lateral extent of petroleum-impacted soils has been fully defined to the north (bound by BH-1, BH-12, and BH-15), to the west (bound by BH-3, BH-18, and BH-19), and to the east (bound by BH-10 and BH-13). The lateral extent of petroleum-impacted soils to the south (e.g., upgradient from the site, beneath Highway 20-26 and potentially offsite to the adjacent property) has not been fully defined.

The lateral extent of petroleum-impacted groundwater has been fully defined to the east (bound by MW-2 and MW-4). It appears that the lateral extents of petroleum-impacted groundwater to the north offsite, west offsite, and south offsite have not been fully defined. However, based on the groundwater flow direction and distribution of dissolved phase contaminants, further contamination is likely present to the west and northwest of monitoring wells MW-6, MW-7, and MW-8.

Therefore, future downgradient (and offsite) migration is possible and clean-up goals must address both onsite and offsite impacts.

Clean-up actions at the Former Anderson Corner site must provide for adequate protection of human health and the environment based on the current and future uses of the property. Clean-

up target levels will be defined by the RUSLs as identified in IDEQ Risk Evaluation Manual for Petroleum Releases (IDEQ 2018). Clean-up target levels for lead in soil and groundwater will be defined by USEPA RSLs for Resident Soil (USEPA 2018b), and USEPA MCLs in drinking water found in the Resident Soil to Groundwater Table (USEPA 2018c).

Table 1. Residential Use Screening Level Concentrations for Soil and Groundwater (Table 2 of IDEQ 2018)

	Soil (mg/kg)		Groundwater (mg/L)		
Analyte	Screening Level	Critical Pathway	Screening Level	Critical Pathway	Basis for Ingestion Screening Level
Benzene	0.025	GWP	0.005	Ingestion	MCL
Toluene	6.6	GWP	1.0	Ingestion	MCL
Ethylbenzene	0.25	Vapor Intrusion	0.05	Vapor Intrusion	NA
Xylenes	27	Vapor Intrusion	8.7	Vapor Intrusion	NA
Naphthalene	0.12	Vapor Intrusion	0.07	Vapor Intrusion	NA
MTBE	0.08	GWP	0.04	Ingestion	Risk-Based
EDB	0.00014	GWP	0.00005	Ingestion	MCL
EDC	0.013	GWP	0.005	Ingestion	MCL
Acenaphthene	200	GWP	2.2	Ingestion	Risk-Based
Anthracene	3,200	GWP	11	Ingestion	Risk-Based
Benz(a)anthracene	0.68	GWP	0.00022	Ingestion	Risk-Based
Benzo(a)pyrene	0.14	Direct Contact	0.0002	Ingestion	MCL
Benzo(b)fluoranthene	1.4	Direct Contact	0.00022	Ingestion	Risk-Based
Benzo(k)fluoranthene	14	Direct Contact	0.0022	Ingestion	Risk-Based
Chrysene	69	GWP	0.022	Ingestion	Risk-Based
Fluoranthene	1,400	GWP	1.5	Ingestion	Risk-Based
Fluorene	240	GWP	1.5	Ingestion	Risk-Based
Pyrene	1,000	GWP	1.1	Ingestion	Risk-Based
Lead[1,2]	400[1]		0.0150[2]		

Notes:
mg/kg = milligram per kilogram
mg/L = milligram per liter
GWP = Ground Water Protection via petroleum contaminants in soil leaching to ground water
MCL = Maximum contaminant level
[1] Screening level is based on Resident Soil Regional Screening Levels (USEPA 2018b)
[2] Screening level is based on USEPA MCL for drinking water from Resident Soil to Groundwater Regional Screening Levels (USEPA 2018c)

Section 4 Identification of Clean-up Alternatives

The following considers a range of reasonable and proven response actions and clean-up alternatives based on contaminant concentrations, site characteristics, current and proposed site use, clean-up goals, associated human health hazards, and potential exposure pathways. This section presents a compilation of potentially applicable technologies for remediating the identified COCs described in Section 3. The objective of this analysis is to identify alternatives to be evaluated further in Section 5.

The following clean-up alternatives are considered for the Former Anderson Corner Grocery site. Clean-up Alternatives 2-6, described below and evaluated in Section 5, assume the completion of Clean-up Alternative 1 prior to their implementation.

Proposed Clean-up Alternatives include:

Alternative 1: A Combination of Excavation and Removal of Petroleum-Contaminated Soils and Free Product Removal

Alternative 2: In-situ Sorption & Biodegradation Injection

Alternative 3: In-situ Chemical Oxidation Injection

Alternative 4: Soil Vapor Extraction and Air Sparging

Alternative 5: Ozone Sparging

Alternative 6: Monitored Natural Attenuation

Alternative 7: No-Action

4.1 Clean-up Alternative 1 – A Combination of Excavation and Removal of Petroleum-Contaminated Soils and Free Product Removal

Description

The previously identified petroleum-contaminated soils will be excavated, removed, and land-farmed, and the resulting pit will be backfilled and compacted with clean soil.

Free product will be absorbed using a product-selective absorbent sock housed inside a stainless steel canister. The sock is a passive collection system for free phase product (such as gasoline or diesel fuel) from monitoring wells. To be most effective, the sock acts as a bailer for excess free product removal, followed by a dedicated sock-in-place system for a more continuous method of recovery.

For bailing, the sock is placed in a stainless steel canister (in this case, a 36-inch long, 2-inch diameter casing designed to fit inside a 2-inch monitoring well casing); a cord is attached to the support loop and then lowered through the product layer. The full length of the sock should come into contact with the product for greater recovery. Immediately, the sock begins absorbing the free product at a rate of approximately 0.1 gallon per second, depending on the product viscosity. After some time, the sock is raised from the well; the sock is then removed from the canister, squeezed out and reused or disposed of. If the socks are reused, approximately 80% of the original sock absorption can be recovered.

For use as a dedicated system, the amount of free product, as well as water table fluctuations, need to be fully understood to effectively accommodate level changes up to 36 inches.

Advantages

- The source of continued petroleum contamination at the site will be removed.
- This option requires no removal, treatment, storage, or discharge considerations for groundwater.
- This clean-up method can be implemented with minimal disturbance to site operations.
- The overall cost of this remediation technology is very low.
- This option uses existing infrastructure and requires no additional well installation.

Disadvantages

- It may not be possible to remove all contaminated soil from the site. Institutional controls, such as land use restrictions may be required to ensure the protection of human health and the environment by limiting exposure to any remaining COCs and protecting the integrity of the remedy.
- The amount of free product absorbed in one event is less volume than a single vacuum truck event. Therefore, full product removal may involve several absorption events and is more time intensive.

4.2 Clean-up Alternative 2 – In-situ Sorption & Biodegradation Injection

Description

In-situ sorption and biodegradation is a remediation technology through which a carbon source is injected into a petroleum-contaminated aquifer through gravity-feed or low-pressure well (typically through a dedicated injection well). The liquid carbon matrix, which consists of a very fine suspension of charged particles, resists clumping and has a water-like viscosity. Upon injection, target contaminants partition out of the aqueous phase and “sorb” onto the liquid carbon matrix, thereby removing mobile contaminants from groundwater and allows for contaminant biodegradation. The carbon matrix is colonized by contaminant-degrading bacteria, which in turn results in a substantial increase in the rate and extent of contaminant destruction. Enhanced biodegradation of contaminants within the matrix regenerates (or frees up sorption sites) allowing contaminants to further partition out of the groundwater. This allows a single application of the liquid carbon matrix to remain functional for an extended/indefinite period of time.

Advantages

- This option reduces the anticipated clean-up times required for monitored natural attenuation (MNA) and other remedial options.
- This clean-up method can be implemented with minimal disturbance to site operations.
- This option requires no removal, treatment, or storage considerations for groundwater.
- This option can achieve very low contaminant concentrations where other technologies cannot.
- The liquid carbon matrix can be strategically delivered to contaminated areas that might otherwise be inaccessible.
- The contaminant-degrading bacteria can remain active in the subsurface for years.

- The bioremediation option has a small environmental footprint versus other technologies.
- The contaminants can be remediated with one application of matrix.

Disadvantages

- Several injection sites may be needed to provide an adequate radius of influence.
- Complex heterogeneous systems involving aquifer materials, soils, and groundwater introduce potential treatment inefficiencies due to imperfect reactive conditions.
- This option has a high initial cost associated with implementation.

4.3 Clean-up Alternative 3 – In-situ Chemical Oxidation Injection

Description

In-situ chemical oxidation (ISCO) involves the introduction of a chemical oxidant into the subsurface for the purpose of transforming groundwater or soil contaminants into less harmful chemical species. ISCO results in transforming a wide range of environmental contaminants and enhances mass transfer. The two most commonly used forms of injected oxidants are permanganate (MnO_4^-) and Fenton's Reagent (hydrogen peroxide [H_2O_2] and Ferrous iron [Fe^{+2}]) or catalyzed hydrogen peroxide.

Advantages

- This option reduces the anticipated clean-up times required for MNA and other remedial options.
- This clean-up method can be implemented with minimal disturbance to site operations.
- This option requires no removal, treatment, or storage considerations for groundwater.

Disadvantages

- Efforts to stabilize the reaction rate in the subsurface are needed to enhance transport distances and persistence.
- This option may require a pilot test to determine which oxidant is the most suitable for the site conditions.
- Complex heterogeneous systems involving aquifer materials, soils, and groundwater introduce potential treatment inefficiencies due to imperfect reactive conditions.
- Strong oxidants may compromise subsurface utilities.
- Several injection sites may be needed to provide an adequate radius of influence.

4.4 Clean-up Alternative 4 – Soil Vapor Extraction and Air Sparging

Description

Soil Vapor Extraction (SVE) is a remedial technology that removes volatile and some semi-volatile contaminants from the subsurface by applying a vacuum and inducing a controlled flow of air. A vacuum blower, connected to SVE wells that are screened above the groundwater table, is used to capture the soil gas and transport it above ground for treatment.

Air sparging is an in-situ remedial technology that reduces concentrations of volatile constituents in petroleum products that are adsorbed to soils and dissolved in groundwater. This technology, which is also known as “in-situ air stripping” and “in-situ volatilization,” involves injecting contaminant-free air into the subsurface saturated zone, enabling a phase transfer of hydrocarbons from a dissolved state to a vapor phase. The air is then vented through the unsaturated zone. Air sparging is most often used together with soil vapor extraction, but it can also be used with other remedial technologies. Air sparging is generally more applicable to the lighter gasoline constituents (i.e., BTEX), because they readily transfer from the dissolved to the gaseous phase.

Advantages

- There is readily available equipment with easy installation for this method.
- This clean-up method can be implemented with minimal disturbance to site operations.
- This option has short treatment times; usually less than 1 to 3 years under optimal conditions.
- This clean-up method is proven as highly effective for remediating BTEX constituents.
- This option requires no removal, treatment, storage, or discharge considerations for groundwater.
- SVE with air sparging promotes in-situ biodegradation.

Disadvantages

- This clean-up method cannot be used if free product exists.
- This option requires a pilot test to determine radius of influence and design considerations.
- Low permeability soils require high vacuum, which may be costly.
- Soil with a high organic contact or that is extremely dry has a high sorption capacity and reduces vapor removal.
- Stratified soils may cause air sparging to be ineffective.
- Some interactions among complex chemical, physical, and biological processes are not well understood.

4.5 Clean-up Alternative 5 – Ozone Sparging

Description

Ozone sparging is a highly effective remedial technology for treating contaminated soil and groundwater in-situ. The process involves injecting high-concentration ozone gas into saturated

soils to chemically oxidize VOCs, semi-volatile organic compounds (SVOCs), chlorinated solvents, petroleum hydrocarbons, and other organic compounds. Injected ozone/air travels horizontally and vertically in channels through the soil column.

A typical ozone sparge system includes a compressed air supply, oxygen concentrator, corona discharge ozone generator, a manifold, and control system. Concentrated ozone gas is directed to the subsurface through a stainless steel manifold using either stainless steel piping or ozone-resistant tubing. Several sparge wells are installed throughout the target zone to deliver the ozone gas to the contaminated soil or groundwater. Automatic solenoid valves may be used to cycle the injection of gas through the sparge wells and to automate the process. Portable (trailer mounted) units are also available for pilot tests and/or source remediation.

Advantages

- This option reduces the anticipated clean-up times required for MNA and other remedial options.
- This clean-up method can be implemented with minimal disturbance to site operations.
- This option requires no removal, treatment, or storage considerations for groundwater.
- Ozone is generated on site, so storage and transportation of dangerous liquid chemicals is not required.
- The by-product of oxidation with ozone is oxygen, so no additional compounds are added to site chemistry.
- This option typically requires less energy than traditional air sparging.

Disadvantages

- This clean-up method has the potential for poor distribution of ozone into the subsurface due to soil heterogeneities.
- This option requires that injection wells are designed for site-specific conditions.
- This option requires several sparge points (wells).
- There is a limited effective distance from the injection point that can be achieved with this clean-up method.
- Because this method does not include pumping of groundwater, the ozone injection points need to intercept groundwater as it moves naturally downgradient, which can be difficult to achieve.

4.6 Clean-up Alternative 6 – Monitored Natural Attenuation

Description

MNA is reducing the concentration and mass of a substance and its breakdown products in soil and/or groundwater through naturally occurring physical, chemical, and biological processes without human intervention or enhancement. These processes include, but are not limited to, dispersion, diffusion, sorption and retardation, and degradation processes such as biodegradation and abiotic degradation (USEPA 1999).

Advantages

- MNA may be less intrusive and disruptive of the site and its infrastructure.

- The option may produce less waste, use less energy, may require less operation and maintenance (O&M) costs, and therefore overall costs may be less.
- MNA does not generate remediation wastes. However, risks from methane produced during natural biodegradation of petroleum hydrocarbons may be a concern.
- This option can reduce the potential for cross-media transfer of contaminants commonly associated with ex-situ treatment.
- This option can reduce the risk of human exposure to contaminants near the source area.
- Natural biodegradation may result in completely destroying contaminants in-situ.
- This option may be used in conjunction with, or as follow-up to, active remedial measures.

Disadvantages

- A site hydrogeological model should be developed to confirm that site characteristics are favorable for MNA.
- The estimated timeframe of MNA may not be comparable to an active remediation method.
- MNA may fail to achieve the desired clean-up levels within a reasonable length of time (and an engineered remedy should instead be selected).
- The option may require institutional controls to ensure protection of human health and the environment through land use and water use restrictions.
- This option is not suitable when contamination has impacted a receptor (e.g., impacted groundwater supply well or vapor intrusion into a building).
- Performance monitoring will generally require more monitoring locations. Monitoring will extend over a longer period of time.
- It may be necessary to implement contingency measures. If so, this may increase the overall cost of remediation.
- MNA may be accompanied by changes in groundwater geochemistry that can mobilize other contaminants.

4.7 Clean-up Alternative 7 – No-Action

Description

The No-Action component assumes no remediation actions will be undertaken at the site and must be considered as part of the comparative analysis process.

Advantages

- Clean-up costs of this component would be zero, although limited costs have already been incurred for site investigations.

Disadvantages

- This would prevent the use or development of the site due to risks posed to users from inhalation, direct contact, and ingestion of site COCs.

Section 5 Detailed Analysis of Clean-up Alternatives

5.1 Description of Evaluation Criteria

The clean-up alternatives identified for the site (see Section 4) are evaluated in this section based on the following performance criteria:

1. Overall protection of human health and the environment
2. Ease of implementation
3. Cost of remediation
4. Sustainability – O&M and long-term effectiveness
5. Ability to meet proposed building and land use
6. Short-term impacts to the environment – "green" remediation approaches

The following sections describing these performance criteria serve as a basis for conducting a comparative analysis of the proposed remedial alternatives.

5.1.1 Overall Protection of Human Health and the Environment

This criterion is used to evaluate whether human health and the environment are adequately protected. Human health protection includes reducing risk to acceptable levels, either by reducing contamination concentrations or eliminating potential routes for exposure to COCs by site users. Environmental protection includes minimizing or avoiding negative impacts to natural, cultural, and historical resources.

5.1.2 Ease of Implementation

Ease of implementation refers to the technical and administrative feasibility of carrying out an alternative and the availability of the required services and materials. The following factors are considered for each alternative:

- The likelihood of technical difficulties in constructing the alternative and delays due to technical problems.
- The potential for regulatory constraints to develop (e.g., as a result of uncovering buried cultural resources or encountering endangered species).
- The availability of necessary equipment, specialists, and provisions, as applicable.

5.1.3 Cost

This criterion considers the cost of implementing an alternative, including capital costs, O&M costs, opportunity costs, and monitoring costs.

5.1.4 Sustainability – Operation and Maintenance and Long-term Effectiveness

Sustainability includes an assessment for the potential need to replace the alternative's technical components in the long term. In addition, this criterion evaluates the ease of O&M procedures required for the site.

5.1.5 Ability to Meet Proposed Building and Land Use

This criterion addresses the clean-up alternative's ability to meet the requirements for public use. These requirements include preserving the site as a whole.

5.1.6 Short-term Impacts to the Environment – "Green" Remediation Approaches

This criterion evaluates the potential short-term impacts to the environment as a result of onsite activities. In addition, consideration is made for reducing the overall environmental footprint and impact to the environment as a result of onsite activities.

5.2 Detailed Analyses of Alternatives

All of the proposed alternatives have the potential to provide for overall protection of human health and the environment and will be designed so they are in compliance with applicable federal, state, and local regulations. Since a No-Action alternative does not meet the goal for protection of human health and the environment, and current risks at the site are unacceptable for the proposed site use, this alternative was not evaluated for the clean-up alternatives.

5.2.1 Detailed Analysis of Combination of Excavation and Removal of Petroleum-Contaminated Soils and Free Product Removal

5.2.1.1 Overall Protection of Human Health and the Environment

This alternative will remove the main source of site contamination, as determined through site testing and analysis. However, some contamination may remain at the site. Transportation of hazardous materials wastes also poses a potential, but negligible, short-term risk to human health and the environment.

5.2.1.2 Ease of Implementation

The source area, demonstrating the highest contamination, has been delineated to the extent possible. Local contractors are available to excavate this area using an excavator and then transport the soil to a nearby landfill that accepts petroleum contaminated soils. The free product would be removed offsite by a certified waste hauler.

5.2.1.3 Cost

Overall costs for this alternative will be initially high, since it involves a one-time removal of the contamination source, transportation to an offsite landfill, and backfilling and compacting with clean soils from an offsite source. Excavation, transportation, and backfill costs, are estimated between $75,000 and $100,000. Free product removal is estimated at $5,000 per event (multiple free product removal events might be needed).

5.2.1.4 Sustainability – Operations and Maintenance and Long-term Effectiveness

If the contamination source is removed, the groundwater monitoring timeframe may be reduced.

5.2.1.5 Ability to Meet Proposed Building and Land Use

Institutional controls may need to be set in place to protect human health and the environment for any future land use. Monitoring would be necessary to determine when groundwater meets acceptable use criteria.

5.2.1.6 Short-term Impacts to the Environment – "Green" Remediation Approaches

This alternative would have significant short-term impacts due to the amount of fossil fuels being used for excavation and transportation. Additionally, the disturbance of the contaminated soils may increase the short-term environmental exposure potential. The excavated soils will be contained in a landfill. Free product will be disposed of by a certified waste hauler.

5.2.2 Detailed Analysis of In-situ Sorption & Biodegradation Injection

5.2.2.1 Overall Protection of Human Health and the Environment

Injecting a biodegradation carbon-based liquid matrix into the groundwater will inhibit the ability of dissolved phase COCs in groundwater to migrate offsite, as determined through site testing and analysis. While some contamination may initially remain at the site, the introduction of the liquid carbon matrix will ensure that remaining contamination in the groundwater will be transformed into less harmful chemical species over time.

5.2.2.2 Ease of Implementation

Direct push technology would inject a carbon liquid matrix between 18 and 28 feet bgs along 320 feet of the northwest boundary of the property (estimated borings at 10 foot spacing). The goal of these injections is to inhibit the migration of dissolved phase COCs in groundwater offsite. Contractors are available to perform the injections.

The implementation of this alternative includes installing additional monitoring wells (off site and downgradient) to monitor the mass reduction and to assess if off site migration is occurring. Monitoring wells would be installed up to 40 feet bgs using a direct push drill rig (groundwater estimated at 20 feet bgs).

5.2.2.3 Cost

Overall costs for this alternative include a one-time injection event and ongoing monitoring to aid in site closure. A one-time injection of the carbon-based liquid matrix includes several direct push borings along 320 feet of the northwest property boundary. The cost of mobilization of the contractors, labor, and product, are estimated at $300,000 to $350,000. Quarterly groundwater monitoring cost is estimated at $15,000 to $20,000 per year (4 events).

5.2.2.4 Sustainability – Operations and Maintenance and Long-term Effectiveness

Since the contamination source will be removed, and the dissolved phase COCs in groundwater are inhibited from migrating offsite, the period of time for confirmation sampling may be shortened, which may lead to a reduced monitoring time frame. Quarterly monitoring is typically continued for a specified period (e.g., one to three years) after remediation objectives have been achieved to ensure that concentration levels are stable and remain below target levels.

5.2.2.5 Ability to Meet Proposed Building and Land Use

Institutional controls may need to be set in place to protect human health and the environment for any future land use. Monitoring would be necessary to determine when groundwater meets acceptable use criteria.

5.2.2.6 Short-term Impacts to the Environment – "Green" Remediation Approaches

Fossil fuels will be burned due to direct push drilling along the property boundary during injection of the liquid-carbon matrix and during groundwater monitoring events.

Direct push technology for groundwater sampling does not result in drill cuttings or excess soil waste and related investigation derived waste. Many current groundwater sampling procedures use low-flow sampling equipment during monitoring to minimize purge volumes and energy consumption while producing little investigation derived waste.

5.2.3 Detailed Analysis of In-situ Chemical Oxidation Injection

5.2.3.1 Overall Protection of Human Health and the Environment

This alternative would transform the soil and groundwater contaminants into less harmful chemical species.

5.2.3.2 Ease of Implementation

Injection wells would need to be installed in several locations on a grid for optimum delivery of oxidants to all petroleum-impacted areas. Permits may be required for injecting an oxidizing agent into the site groundwater.

5.2.3.3 Cost

The cost of the type of oxidant used will drive the overall cost of this clean-up alternative. The cost to implement a source area injection could range from $200,000 to $250,000. Several injections may also be required at a cost determined by the type of oxidant. Quarterly groundwater monitoring cost is estimated at $15,000 to $20,000 per year (4 events).

5.2.3.4 Sustainability – Operations and Maintenance and Long-term Effectiveness

This alternative may require institutional controls to ensure that human health is adequately protected. Quarterly monitoring will also be needed to determine the effectiveness of the chemical oxidation.

5.2.3.5 Ability to Meet Proposed Building and Land Use

Institutional controls may need to be set in place to protect human health and the environment for any future land use. Monitoring would be necessary to determine when groundwater meets acceptable use criteria.

5.2.3.6 Short-term Impacts to the Environment – "Green" Remediation Approaches

Fossil fuels will be burned due to installing monitoring wells (injection points) and during groundwater monitoring events.

Many current groundwater sampling procedures use low-flow sampling equipment during monitoring to minimize purge volumes and energy consumption while producing little investigation derived waste.

5.2.4 Detailed Analysis of Soil Vapor Extraction and Air Sparging

5.2.4.1 Overall Protection of Human Health and the Environment

This alternative would address dissolved phase COCs in the groundwater through air sparging (converting dissolved phase into vapor phase), as well as removing soil vapor within the pore spaces of the soil through exhaust system of the SVE unit.

5.2.4.2 Ease of Implementation

An SVE and air sparging system can be left onsite without disturbing the current or future site use. A direct push drill rig will be necessary to complete the construction of the air sparging and soil vapor extraction wells. However, this option requires detailed pilot testing and monitoring to ensure vapor control and limit contamination migration. This system might be difficult to implement due to the low permeability of the soils (clay and silts) from surface to about 20 feet bgs, yielding the need for a stronger vacuum to be effective.

5.2.4.3 Cost

Low permeability soils, such as the silt and clay found at the site within the top 20 feet bgs, require high vacuum, which may be costly. Overall implementation costs are estimated at $60,000 to $150,000. O&M costs are $35,000 to $40,000 per year. Quarterly groundwater monitoring cost is estimated at $15,000 to $20,000 per year.

5.2.4.4 Sustainability – Operations and Maintenance and Long-term Effectiveness

Quarterly monitoring will be needed to determine the effectiveness of the SVE and air sparge system and to ensure that human health is adequately protected.

5.2.4.5 Ability to Meet Proposed Building and Land Use

Institutional controls may need to be set in place to protect human health and the environment for any future land use. Monitoring would be necessary to determine when groundwater meets acceptable use criteria.

5.2.4.6 Short-term Impacts to the Environment – “Green” Remediation Approaches

Fossil fuels will be burned during the installation of the injection wells and during monitoring events.

Direct push technology for installing injection wells does not result in drill cuttings or excess soil waste and related investigation derived waste. Many current groundwater sampling procedures use low-flow sampling equipment during monitoring to minimize purge volumes and energy consumption while producing little investigation derived waste.

5.2.5 Detailed Analysis of Ozone Sparging

5.2.5.1 Overall Protection of Human Health and the Environment

Ozone sparging is a highly effective in-situ remedial technology that would address COCs found in site soil and groundwater. This alternative would chemically oxidize the soil and groundwater contaminants into less harmful chemical species.

5.2.5.2 Ease of Implementation

An ozone sparging system can be left onsite without disturbing the current or future site use. A direct push drill rig to will be necessary to complete the construction of the ozone sparging injection wells. However, this option requires detailed pilot testing and monitoring to limit contamination migration.

5.2.5.3 Cost

Installation of the ozone sparge system (equipment, installation, and startup costs) are estimated at $80,000 to $180,000. O&M costs could range from approximately $3,000 to $4,000 per month of operation. Quarterly groundwater monitoring is estimated at $15,000 to $20,000 per year (4 events).

5.2.5.4 Sustainability – Operations and Maintenance and Long-term Effectiveness

Quarterly monitoring will be needed to determine the effectiveness of the ozone sparge system and to ensure that human health is adequately protected.

5.2.5.5 Ability to Meet Proposed Building and Land Use

Institutional controls may need to be set in place to protect human health and the environment for any future land use. Monitoring would be necessary to determine when groundwater meets acceptable use criteria.

5.2.5.6 Short-term Impacts to the Environment – “Green” Remediation Approaches

Fossil fuels will be burned during the installation of the injection wells and during monitoring events.

Direct push technology for installing injection wells does not result in drill cuttings or excess soil waste and related investigation derived waste. Many current groundwater sampling procedures use low-flow sampling equipment during monitoring to minimize purge volumes and energy consumption while producing little investigation derived waste.

5.2.6 Detailed Analysis of Monitored Natural Attenuation

5.2.6.1 Overall Protection of Human Health and the Environment

MNA works best where site conditions are favorable. Under appropriate field conditions, the regulated compounds BTEX may naturally degrade through microbial activity and ultimately produce non-toxic end products (e.g., carbon dioxide and water). Where microbial activity is sufficiently rapid, the dissolved BTEX contaminant plume may stabilize (i.e., stop expanding), and contaminant concentrations in both groundwater and soil may eventually decrease to levels below regulatory standards. Following degradation of a dissolved BTEX plume, a residue consisting of heavier petroleum hydrocarbons of relatively low solubility and volatility will typically be left behind in the original source (spill) area. Although this residual contamination may have relatively low potential for further migration, it still may pose a threat to human health or the environment either from direct contact with soils in the source area or by continuing to slowly leach contaminants to groundwater. For these reasons, MNA alone is generally not sufficient to remediate petroleum release sites. Implementation of source control measures in

conjunction with MNA is almost always necessary. Other controls (e.g., institutional controls), in accordance with applicable state and federal requirements, may also be necessary to ensure protection of human health and the environment.

5.2.6.2 Ease of Implementation

Through Brown and Caldwell's 2004 and Alta's 2017 investigations, the site area demonstrating the highest contamination on the site has been delineated to the extent possible. The implementation of this Alternative includes installing off site (downgradient) wells to investigate if off site migration is occurring and quarterly groundwater monitoring of the entire well network.

5.2.6.3 Cost

MNA has a relatively low up-front cost that includes installing up to four off site, downgradient deep monitoring wells. However, performance monitoring should continue until remediation objectives have been achieved, and longer if necessary, to verify that the site no longer poses a threat to human health or the environment. Typically, monitoring is continued for a specified period (e.g., one to three years) after remediation objectives have been achieved to ensure that concentration levels are stable and remain below target levels. Initial groundwater monitoring costs are estimated at $8,000 to $10,000 (higher due to off site well installation)., Subsequent quarterly groundwater monitoring cost is estimated at $15,000 to $20,000 per year (4 events).

5.2.6.4 Sustainability – Operations and Maintenance and Long-term Effectiveness

MNA often requires a longer time-frame to meet remedial goals compared to more active remedies. Monitoring is also continued for a specified period (e.g., one to three years) after remediation objectives have been achieved to ensure that concentration levels are stable and remain below target levels. Additionally, contingency remedies may need to be established if the contaminant plume does not change.

5.2.6.5 Ability to Meet Proposed Building and Land Use

Institutional controls may need to be set in place to protect human health and the environment for any future land use. Monitoring would be necessary to determine when groundwater meets acceptable use criteria.

5.2.6.6 Short-term Impacts to the Environment – "Green" Remediation Approaches

There is little disturbance to the environment during MNA, and there is a reduced volume of investigation derived wastes. Direct push technology for groundwater sampling does not result in drill cuttings or excess soil waste and related investigation derived waste. Many current groundwater sampling procedures use low-flow sampling equipment during monitoring to minimize purge volumes and energy consumption while producing little investigation derived waste.

Section 6 Comparative Analysis of Clean-up Alternatives

6.1 Alternative Ranking Criteria

Table 2 compares the analysis of the proposed alternatives against the evaluation criteria. Alternatives with higher scores are considered better clean-up options. Rankings are made on a scale of "1" through "3" with:

- 1 = Low Success,
- 2 = Moderate or Average Success, and
- 3 = High Success.

Table 2. Comparative Analysis of Clean-up Alternatives

Clean-up Alternative	Overall Protection of Human Health and the Environment	Ease of Implementation	Cost-Effective Approach towards Remediation	Sustainability - O&M and Long-term Effectiveness	Ability to Meet Proposed Land Use	"Green" Remediation Approach	Total Score
Combination of Excavation and Removal of Petroleum-Contaminated Soils and Free Product Removal	2	3	3	2	2	3	15
In-situ Sorption & Biodegradation Injection	2	2	1	3	3	2	13
In-situ Chemical Oxidation Injection	2	2	1	3	3	2	13
Soil Vapor Extraction and Air Sparging	2	2	2	2	3	2	13
Ozone Sparging	2	2	2	2	3	3	14
Monitored Natural Attenuation	1	3	3	1	1	3	12
No-Action	1	3	3	1	1	1	10

Notes:

(1=Low Success, 2=Medium Success, 3=High Success)

(For Cost: 1=High Cost, 2=Medium Cost, 3=Low Cost)

6.2 Summary

Soil excavation and removal of petroleum-contaminated soil and free product removal will likely address the majority of the contributing source area. The level of success of soil excavation and

source removal may further inform the appropriateness of groundwater treatment. A phased approach that first implements soil and free product removal followed by evaluation of a second phase approach to groundwater remediation may provide the most cost effective and prudent approach. Based upon the success of the initial phase of soil and free product removal, implementing an in-situ injection or using a sparging system appears the likely preferred alternative for addressing groundwater impacts.

The in-situ injection alternatives (both Chemical Oxidation and Sorption/Biodegradation), as well as Ozone Sparging and SVE/Air Sparging alternatives were similarly ranked yet they each score differently in significant areas. The in-situ chemical and biodegradation injection alternatives have a higher overall long-term effectiveness but are much more costly to implement ($200,000 to $350,000 initial implementation costs), while sparging alternatives (both Ozone and SVE/Air Sparging) have lower initial implementation costs ($30,000 to $90,000) but incur higher costs per month to operate and maintain (around $4,000 per month). All alternatives incur quarterly monitoring costs ($15,000 to $20,000 per year).

Although less costly overall, the MNA alternative, as well as the No Action alternative, appears to be the least effective alternatives due to the inability to meet proposed (or unknown future) land use in a reasonable time frame and low success of protecting human health and the environment. If the plume is contained to the current site and future land use is restricted through an environmental covenant, the MNA alternative may rank higher as an alternative. Table 3 provides a side by side cost comparison of the alternatives.

Section 7 References and Resources Used

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http://parmacity.net/, accessed February 26, 2018).

Table 3. Cost Comparisons

	Contaminated Soil and Free Product Removal		In-situ Sorption & Biodegradation	
	Low	High	Low	High
Assessment/Planning	$5,000.00	$7,000.00	$5,000.00	$7,000.00
Design	$5,000.00	$10,000.00	$10,000.00	$15,000.00
Remedial Implementation	$80,000.00	$120,000.00	$300,000.00 [1]	$350,000.00 [1]
O&M	-	-	-	-
Groundwater Monitoring	-	-	$45,000.00 [5]	$60,000.00 [5]
Project Total Estimate	**$ 90,000.00**	**$ 137,000.00**	**$ 360,000.00**	**$ 432,000.00**

	In-situ Chemical Oxidation		SVE/Air Sparging	
	Low	High	Low	High
Assessment/Planning	$5,000.00	$7,000.00	$5,000.00	$7,000.00
Design	$10,000.00	$15,000.00	$6,000.00	$10,000.00
Remedial Implementation	$200,000.00	$250,000.00	$60,000.00	$150,000.00
O&M	$200,000.00 [2]	$300,000.00 [2]	$105,000.00 [3]	$120,000.00 [3]
Groundwater Monitoring	$45,000.00 [5]	$60,000.00 [5]	$45,000.00 [5]	$60,000.00 [5]
Project Total Estimate	**$ 460,000.00**	**$ 632,000.00**	**$221,000.00**	**$347,000.00**

	Ozone Sparging		MNA	
	Low	High	Low	High
Assessment/Planning	$5,000.00	$10,000.00	-	-
Design	$8,000.00	$15,000.00	-	-
Remedial Implementation	$80,000.00	$180,000.00	$8,000.00	$10,000.00
O&M	$36,000.00 [4]	$48,000.00 [4]	-	-
Groundwater Monitoring	$45,000.00 [5]	$60,000.00 [5]	$150,000.00 [6]	$200,000.00 [6]
Project Total Estimate	**$174,000.00**	**$313,000.00**	**$ 158,000.00**	**$ 210,000.00**

[1] Assumes one injection event.

[2] Assumes 2 more injection events. Cost highly dependent on chemical oxidant chosen. Approximated at $100,000 - $150,000 per subsequent injection event.

[3] Assumes maintenance costs per year for 3 years ($35,000 - $40,000 per year).

[4] Assumes sparging continues for 1 year ($3,000-$4,000/month).

[5] Assumes quarterly groundwater monitoring for 3 years ($15,000 - $20,000 per year).

[6] Assumes quarterly groundwater monitoring for 10 years ($15,000 - $20,000 per year).

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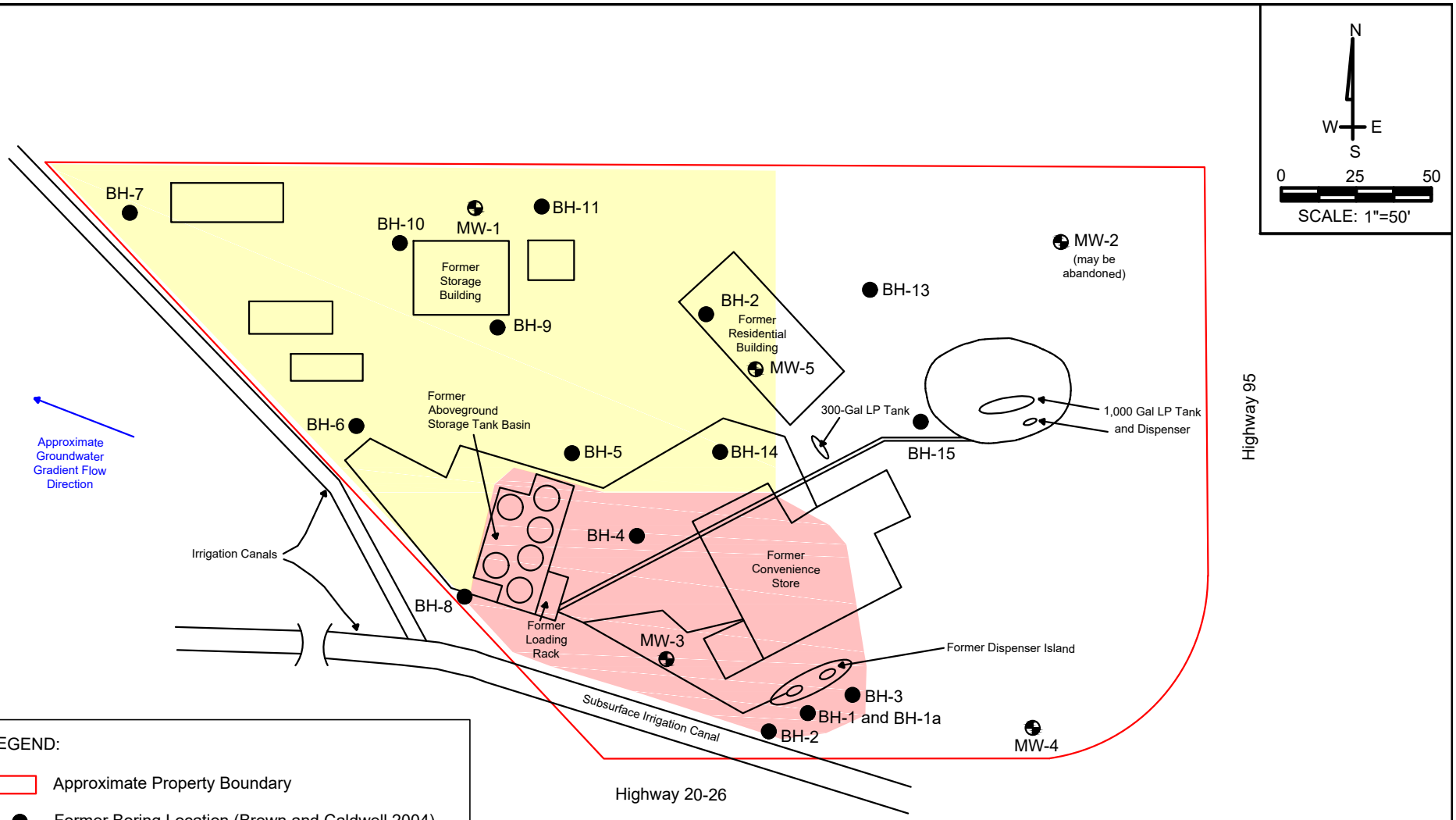
Alta Science & Engineering, Inc.	Print Date: March 5, 2018 Project Number: 17021	Projection: NAD83 Idaho SP West feet Project Manager: K. Eiriksson Cartographer: B. Bailey	Project Name: **Anderson Corner Grocery**	**Figure 1** **Site Location and Layout**	This map was produced using information obtained from several different sources that have not been independently verified. These sources have also not provided information on the precision and accuracy of the data. Information on this map is not a substitute for survey data.



Alta Science & Engineering, Inc.

PRINT DATE: April 17, 2018	PROJECTION: UTM NAD 83, Zone 11N	PROJECT NAME: Former Anderson Corner Grocery 28040 Highway 20-26 Parma, Idaho	FIGURE 2 Site Layout with Previous 2004 Sampling Locations (Brown and Caldwell)	This map was produced using information obtained from several different sources that have not been independently verified. These sources have also not provided information on the precision and accuracy of the data. Information on this map is not a substitute for survey data.
PROJECT NUMBER: 18016	PROJECT MANAGER: M. Studer			
	CARTOGRAPHER: M. Studer			

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Alta Science & Engineering, Inc.

Print Date	March 5, 2018
Project Number	18016
Projection	NAD83 Idaho SP West feet
Project Manager	M. Studer
Cartographer	B. Bailey
Project Name	Anderson Corner Grocery

This map was produced using information obtained from several different sources that have not been independently verified. These sources have also not provided information on the precision and accuracy of the data. Information on this map is not a substitute for survey data.

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1 inch = 33 feet
0 20 40 Feet

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Figure 3
Soil Boring and Groundwater Monitoring Well Locations

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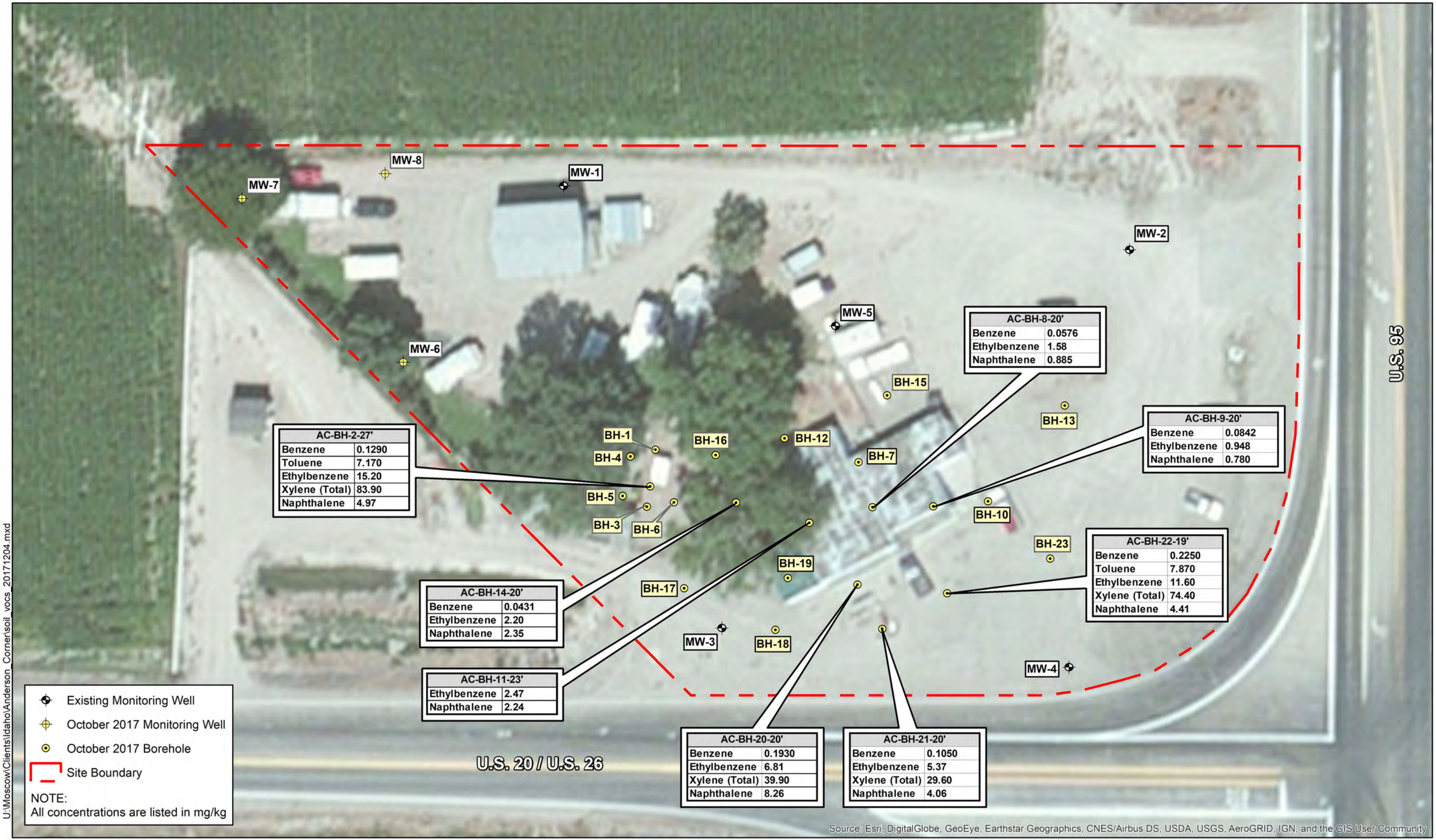
Alta Science & Engineering, Inc.

Print Date: December 22, 2017	Projection: NAD83 Idaho SP West feet	Project Name: **Anderson Corner Grocery**	This map was produced using information obtained from several different sources that have not been independently verified. These sources have also not provided information on the precision and accuracy of the data. Information on this map is not a substitute for survey data.	1:400 1 inch = 33 feet 0 20 40 Feet	**Figure 4** **PID Isocontours 0 - 15'**
Project Number: 17057-04	Project Manager: M. Procsal				
	Cartographer: B. Bailey				



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Alta Science & Engineering, Inc.

Print Date	December 22, 2017
Project Number	17057-04
Projection	NAD83 Idaho SP West feet
Project Manager	M. Procsal
Cartographer	B. Bailey
Project Name	Anderson Corner Grocery

This map was produced using information obtained from several different sources that have not been independently verified. These sources have also not provided information on the precision and accuracy of the data. Information on this map is not a substitute for survey data.

1:400
1 inch = 33 feet
0 20 40 Feet

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Figure 5
Soil Concentrations Exceeding RUSL's

U:\Moscow\Clients\Idaho\Anderson_Corner\gw_contour_20171207.mxd

Alta Science & Engineering, Inc.

Print Date: December 22, 2017	Projection: NAD83 Idaho SP West feet	Project Name: **Anderson Corner Grocery**	This map was produced using information obtained from several different sources that have not been independently verified. These sources have also not provided information on the precision and accuracy of the data. Information on this map is not a substitute for survey data.	1:400 1 inch = 33 feet 0 20 40 Feet	**Figure 6** **Groundwater Contour Map**
Project Number: 17057-04	Project Manager: M. Procsal				
	Cartographer: B. Bailey				

MEMORANDUM

5/4/2017

TO: Terri Griffith

FROM: Tina Elayer

RE: Petroleum Determination for Anderson Corner Store Property Located at 28040 Hwy 20/26, Parma, Idaho 83660

This memorandum serves as the property specific determination for the Anderson Corner Store Property located at 28040 Hwy 20/26, Parma, Idaho (Site). The Idaho Department of Environmental Quality (IDEQ) through the use of one of our consultants intends to conduct a Phase II Environmental Site Assessment (ESA) to identify potential recognized environmental conditions (RECs) at the property for Canyon County.

Anderson Corner Store has operated as a gas station and convenience store from the 1930's until mid-2000's. Above ground storage tanks (ASTs) were installed in late 1960's. A product dispenser island was located south of the main building site. Six steel ASTs were located in a fenced storage area approximately 50 feet west of main building with the following tank sizes- 8,000-gallon unleaded AST, one 6,000-gallon unleaded AST, two 4,000-gallon diesel fuel ASTs, one 4,000-gallon unleaded AST and one 3,000-gallon diesel fuel AST. Fuel dispensers included a bulk filling station located adjacent to the AST basin, and dispensers located south of the main site building. Underground product delivery piping was routed from the southeastern corner of the AST basin east/southward to the product dispensers.

The site was purchased by Ms. Delores Sudden in 1972 who applied to the Petroleum Storage Tank Fund (PSTF) for insurance in 1994. PSTF conducted a preliminary Level I site assessment where a level II investigation was recommended for the site. The shallow gas investigation consisted of advancing a soil gas probe to a depth of 4 feet bgs at 16 locations and collecting a gas sample. Relatively high levels of VOCs were indicated in the vicinity of the site product dispensers at 4 feet bgs, and near the bulk fueling area adjacent to the AST basin at 4 feet and 14 feet bgs. In December 1996 Albert J. and Nina Kurpjuweit purchased the site from Ms. Sudden and continued to operate the business as a fueling station and convenience store. An inspection by PSTF on June 29, 2004 identified a leaking pipe connection on a western gas dispenser which prompted a release investigation by Brown and Caldwell. A total of 15 borings and five monitoring wells were drilled at the site and analytical data collected indicated that subsurface soils and groundwater at the site has been impacted by the leaded gas release from an older abandoned underground piping run that connected to an abandoned dispenser island formerly located on the west side of the property. The ASTs have been removed from the site.

IDEQ is proposing to conduct a Phase II environmental site assessment (ESA) referencing ASTM E1527-13 to identify potential RECs – as defined in ASTM E1527-13 at the site. The Phase II will be conducted by an environmental professional as defined under the EPA AAI rule and will conform to the criteria for AAI as set by 42 USC section 9601(35)(B)(iii).

IDEQ considers this Site to be eligible for EPA funding assistance due to the following:

- The Site is considered by IDEQ to be relatively low risk for petroleum sites in the state. There has not been any LUST trust fund dollars expended on the site. There has been no historical use of OPA funds at the site. There is no evidence of a continuing or recurring release at the site.

- There currently is no viable responsible party. Canyon County, an Idaho county, took the property back for failure to pay property taxes for at least three consecutive years and obtained a tax foreclosure on the property in 2016. There are no unresolved judgements, enforcement actions, citizen suits or other third party claims that would require the current owner, Canyon County, to conduct activities including assessment or cleanup of the Site.

IDEQ has determined that there is no viable responsible party based on the above described conditions. Canyon County obtained the property in 2016. Neither IDEQ nor Canyon County has ever dispensed fuel, operated or owned the property when fuel was dispensed.

The Site is not subject to a RCRA Corrective Action Order under Sec. 9003(h) of the Solid Waste Disposal Act.

Based on the eligibility criteria set for Brownfields funding for petroleum sites, the Anderson Corner Site in Parma, Idaho meets the eligible criteria for state IDEQ Brownfields assessment funding.

Please contact me with any questions or concerns at 208-373-0563.

Sincerely,

Tina Elayer

Brownfields Program Specialist

ec: Eric Traynor, State Office DEQ

TRIM# 2017BBD28

Community Notification and Public Meeting

Notice was given by the Board of Canyon County Commissioners of its intent to apply for an EPA Brownfields Cleanup Grant and that a Public Meeting would be held on June 8, 2018 from 12:00 p.m. to 2:00 p.m. to provide information and consider public comment on the County's draft grant proposal.

The purpose of the grant is to assist with remediation of contamination at the site commonly referred to as Anderson Corner, located at 28040 Highway 20-26, Parma, Idaho 83660. The meeting will be held in the Patricia Romanko Public Library, 121 North 3rd Street, Parma, Idaho 83660.

A copy of the draft grant proposal, as well as the draft Analysis of Brownfields Cleanup Alternatives was available for public review and comment at the meeting, as well as on the Canyon County website at www.canyonco.org.

Interested persons were invited to attend this public meeting to obtain information, ask questions, and complete a survey or provide written testimony concerning this matter. A link to the survey could be found at www.canyonco.org. This survey and the opportunity to respond with written comments extended from 8 June, 2018 through 8 July, 2018. Assistance was available for persons with disabilities.

Twenty five individuals attended the public meeting and 87 individuals took our survey and commented on our proposal.

Summary of public input:

- 85% of the participants resided in Canyon County, the remainder of the participants resided in adjacent Idaho Counties.
- 40% of the participants traveled past the site a few times a month while 60% infrequently traveled past the site.
- 60% of the participants were concerned about the safety of the highway intersection at the site.
- 98% of the participants thought that public safety should be a priority when considering the future development of the site.
- 92% of the participants thought that the property should be used to improve the safety of the existing intersection.
- 99% of the participants thought that Canyon County should pursue a Brownfield Cleanup Grant to mitigate the contamination on the site.
- 58% of the participants said they would object to the County taking no action to cleanup the contamination on the site.

Written comments:

I live next to Anderson Corner and do not want anything done that could contaminate my well water.
If contaminants need to be cleaned up, the County needs to do it. If there is a grant available to cover the cost, The County has a responsibility to apply and get the grant

either the same as leaving the contamination or allowing it to seep into ground water
don't think "No action" would be an appropriate response to a serious public health risk like petroleum contamination.

Concerns are that, that area is farming land and residents are on wells. saturation of the ground water would be hazardous, if not deadly

Because the problem should be performed correctly, and not using a fix that may or may not work that requires monitoring. Fix right!

Waste of time and money. X it out and get it done

It would not be in the best interest for the environment to do nothing.

Doing nothing does not mitigate the issues at the property. Natural attenuation is probably the best low cost method, but if it requires years and years, more than than, then other alternatives should be considered.

Clean the mess up.

No action is not acceptable for public safety and health concerns

No action won't help the problem.

The property should be cleaned up

No action wouldn't fix anything.

County Response to comments: Canyon County is committed to cleaning up the contamination of the Anderson Corner site and returning the property to productive use for our citizens and visitors. Canyon County will pursue a Brownfield Cleanup Grant to assist with the mitigation of the contamination at the site.

John Bechtel's Ramblings

It was good to be back in print! I know that I just Ramble along about anything and everything. I think it is a kinda therapy for me to just express myself. Some times with something relatively important and some time just gibberish. But I enjoy it. So here goes with this weeks Ramblin!

I had several days at school in different class rooms and several meetings. I got some work done around the house and very unpleasantly because of some close construction we have been chasing mice in the house. Sure will be glad when they get this Subdivision filled. I am sure most houses around here are having the same problem.

On the 17th I had one of the monthly Caldwell Veteran Memorial Hall Board meetings. We had some good reports and we planned for the Fund Riser we had on Saturday the 19th. Let Freedom Ring, Sponsored by the Birds of Prey Motorcycle Club. The turnout was a little disappointing, there were just too many activities going on around the valley. But we did have a decent crowd. We had Food supplied by Jalapenos in Nampa and it was delicious. Emma and her crew did a great job. We had a live band and several displays set up with information and a couple of Recreational two wheeler and four wheeler businesses put some of their stock on display. A Raffle and silent auction items as well. The Hall was open for tours. The weather could not have been better.

This week around our area there are several Graduations and other programs happening. I will be speaking at the Wilder Senior Breakfast on the 24th and then going to the Graduation in the evening (Talking about when the paper comes out). Our Grand-Daughter will be singing the National Anthem. There will be several days I will have been in the class room again this week when you are reading this. Writing this a week before it is in print confuses me from time to time.

For just a moment back to the Freedom Rings ceremony, I was ask to say the Pledge Allegiance to begin the ceremony, believe me they will not ask we to do that again. I cannot believe it but I fouled up on the Pledge. I have only been saying from the age of six and here seventy-five years later I get up on stage and I am tongue tied. How embarrassing that was!

I will say it again do not get old!

Here is some more for you Graduating Seniors. 1. (this one fits me) If you mess up it is not your parents fault, so don`t whine about your mistakes, learn from them. 2. The world will not care about your self esteem. The world will expect you to accomplish something before you feel good about yourself. 3. Before you were born your parents were not as boring as they are now. The got that way from paying your bills, cleaning your cloths, and listening to you talk about how cool your are. So before you save the rain forest from parasites of your parents generation, try delousing the closet in your room!

Here is a little story out of England. According to Pilot Magazine, two members of the British traffic Police were running radar, checking for speeders, when suddenly their Radar locked on a speeder of just over 300 miles per hour. Seconds later a low flying Harrier Jet flew over their heads. The Policemen complained to the Royal Air force. They were told they were very lucky to be alive because the Jets target seeker locked onto their Radar as enemy Radar, which triggered an automatic retaliatory air-to-surface missile attack! What saved them was the Harrier was unarmed.

My last thought: The happiest people do not have the best of everything; They just make the best of everything they have! Remember God loves YOU!

John Bechtel,
Mr. X

Theft Suspects Arrested, Property Recovered at Old Fort Boise Park

On May 22nd Parma Police responded to a report of theft in Old Fort Boise Park. The reporting party informed officers that an unknown subject had removed the lock from the self pay box of the camping area and unlawfully taken approximately $30 in camping fees.

Investigation led to Kayla M Veirrra, 30 of Nampa and Miya Lyn Ashby, 34, also of Nampa. Both were found to had outstanding warrents from Canyon County. Veirra was wanted a $50,000 warrant for Failing to Appear for a previous charge of Burglary and Grand Theft. Ashby was wanted on a $10,000 warrant for Failure to Apprear regarding a previous charge of Possession of a Controlded Substance.

Further investigation revealed that the women were in possession of a number of items that had been reported stolen from several Burglary and Theft investigations in the Parma area and throughout Canyon County.

Currently, Veirra and Ashby have been linked to four separate Burglaries and two Theft cases. Parma Police Department believes they will be linked to more cases as additional victims come forward to reclaim their property. A number of items have already been returned to victims.

If you have any information that would aid in this investigation police ask that you call 208-722-7373 to speak to Parma P.D.

Parma P.D would like to thank Wilder Police Department and the Canyon County Sheriff's Office for their assistance in this investigation.

Additionally, residents are reminded to lock cars, their homes and out-buildings for the safety of the property and family.

This investigation is on-going.

Parma Art Guild

Join Us to Find Your Inner Artist!

Members meet weekly, on Thursdays, at Parma Fire House 2, located at Anderso Corner (also known as Nunhems Station), bring a lunch.

Sessions run from 9:30 a.m. to 2 p.m.

Parma City Hall has requested the Guild have local artist display a painting each month. Check it ouit when you artsvisiting City Hall.

For more information call
Kaye Gyllenskog - 208-674-1181.

Notus School Food Pantry

The Notus School Food Pantry is open to all Notus school district students, staff, and their families: every Thursday from 1 - 3 p.m. or by appointment.

Please call the school if you need to set an

NOTICE OF PUBLIC MEETING CANYON COUNTY BOARD OF COMMISSIONERS

NOTICE IS HEREBY GIVEN by the Board of Canyon County Commissioners of its intent to apply for an EPA Brownfields Cleanup Grant and that a Public Meeting will be held on June 8, 2018 from 12:00 p.m. to 2:00 p.m. to provide information and consider public comment on the County's draft Proposal.

The purpose of the grant is to assist with remediation of contamination at the site commonly referred to as Anderson Corner, located at 28040 Highway 20-26, Parma, Idaho 83660. The meeting will be held in the Patricia Romanko Public Library, 121 North 3rd Street, Parma, Idaho 83660.

A copy of the draft grant proposal, as well as the draft Analysis of Brownfields Cleanup Alternatives is will be available for public review and comment at the meeting, as well as on the Canyon County website at www.canyonco.org.

Interested persons are invited to attend this public meeting to obtain information, ask questions, and complete a survey or provide written testimony concerning this matter. A link to the survey can also be found at www.canyonco.org. Assistance is available for persons with disabilities. Please call at least 24 hours prior to the hearing so that arrangements can be made.

The information is also available for review at the County Commissioners' office. For more information, contact the Monica Reeves at (208) 454-7507 or by emailing bocc@canyonco.org.

Canyon County Brownfield Grant Application
Public Meeting Sign In Sheet
Parma City Library
June 8, 2018

Name:	City of Residence (or nearest City):
Tina Glazier	Boise, Idaho
Eric Traynor	Boise, Idaho
NICHOLE SCHWEND	BOISE, IDAHO
TOM BRINK	NAMPA, IDAHO
Gina Reay	Parma, ID.
Laura Barbour	Boise, ID
Kim Swanson	Nampa ID
Cindy Cook	Parma ID
Nicole Foy / Idaho Press	Nampa ID
Helen Marchbanks	Parma, ID
[illegible]	Parma ID
[illegible]	Parma ID
[illegible]	PARMA, ID
Karen Barbour	Parma, ID
Sarah Barbour	Parma, ID
Jim Barbour	Parma, ID
[illegible]	Parma, ID.

OMB Number: 4040-0004
Expiration Date: 12/31/2019

Application for Federal Assistance SF-424

* 1. Type of Submission:
- [ ] Preapplication
- [x] Application
- [ ] Changed/Corrected Application

* 2. Type of Application:
- [x] New
- [ ] Continuation
- [ ] Revision

* If Revision, select appropriate letter(s):

* Other (Specify):

* 3. Date Received: 01/29/2019

4. Applicant Identifier: Canyon County

5a. Federal Entity Identifier:

5b. Federal Award Identifier:

State Use Only:

6. Date Received by State:

7. State Application Identifier:

8. APPLICANT INFORMATION:

* a. Legal Name: Canyon County

* b. Employer/Taxpayer Identification Number (EIN/TIN): 826000290

* c. Organizational DUNS: 0977633200000

d. Address:

* Street1: 1115 Albany Street
Street2:
* City: Caldwell
County/Parish: Canyon
* State: ID: Idaho
Province:
* Country: USA: UNITED STATES
* Zip / Postal Code: 83605-3522

e. Organizational Unit:

Department Name: Board of County Commissioners

Division Name:

f. Name and contact information of person to be contacted on matters involving this application:

Prefix: Mr.
* First Name: Paul
Middle Name:
* Last Name: Navarro
Suffix:

Title: Facilities Director

Organizational Affiliation: Canyon County

* Telephone Number: 208-454-7473
Fax Number:

* Email: pnavarro@canyonco.org

Application for Federal Assistance SF-424

*** 9. Type of Applicant 1: Select Applicant Type:**

B: County Government

Type of Applicant 2: Select Applicant Type:

Type of Applicant 3: Select Applicant Type:

* Other (specify):

*** 10. Name of Federal Agency:**

Environmental Protection Agency

11. Catalog of Federal Domestic Assistance Number:

66.818

CFDA Title:

Brownfields Assessment and Cleanup Cooperative Agreements

*** 12. Funding Opportunity Number:**

EPA-OLEM-OBLR-18-07

* Title:

FY19 GUIDELINES FOR BROWNFIELDS CLEANUP GRANTS

13. Competition Identification Number:

Title:

14. Areas Affected by Project (Cities, Counties, States, etc.):

Add Attachment | Delete Attachment | View Attachment

*** 15. Descriptive Title of Applicant's Project:**

Anderson Corner Cleanup, Parma, Idaho.

Attach supporting documents as specified in agency instructions.

Add Attachments | Delete Attachments | View Attachments

Application for Federal Assistance SF-424

16. Congressional Districts Of:

* a. Applicant: ID-001 * b. Program/Project: ID-001

Attach an additional list of Program/Project Congressional Districts if needed.

Add Attachment | Delete Attachment | View Attachment

17. Proposed Project:

* a. Start Date: 07/01/2019 * b. End Date: 07/01/2022

18. Estimated Funding ($):

* a. Federal	498,854.00
* b. Applicant	99,769.00
* c. State	0.00
* d. Local	0.00
* e. Other	0.00
* f. Program Income	0.00
* g. TOTAL	598,623.00

*** 19. Is Application Subject to Review By State Under Executive Order 12372 Process?**

☐ a. This application was made available to the State under the Executive Order 12372 Process for review on .

☐ b. Program is subject to E.O. 12372 but has not been selected by the State for review.

☒ c. Program is not covered by E.O. 12372.

*** 20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes," provide explanation in attachment.)**

☐ Yes ☒ No

If "Yes", provide explanation and attach

Add Attachment | Delete Attachment | View Attachment

21. *By signing this application, I certify (1) to the statements contained in the list of certifications and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances** and agree to comply with any resulting terms if I accept an award. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 218, Section 1001)**

☒ ** I AGREE

** The list of certifications and assurances, or an internet site where you may obtain this list, is contained in the announcement or agency specific instructions.

Authorized Representative:

Prefix: Mr. * First Name: Zach

Middle Name:

* Last Name: Wagoner

Suffix:

* Title: Controller

* Telephone Number: 208-455-6080 Fax Number:

* Email: zwagoner@canyonco.org

* Signature of Authorized Representative: Joe Decker * Date Signed: 01/29/2019